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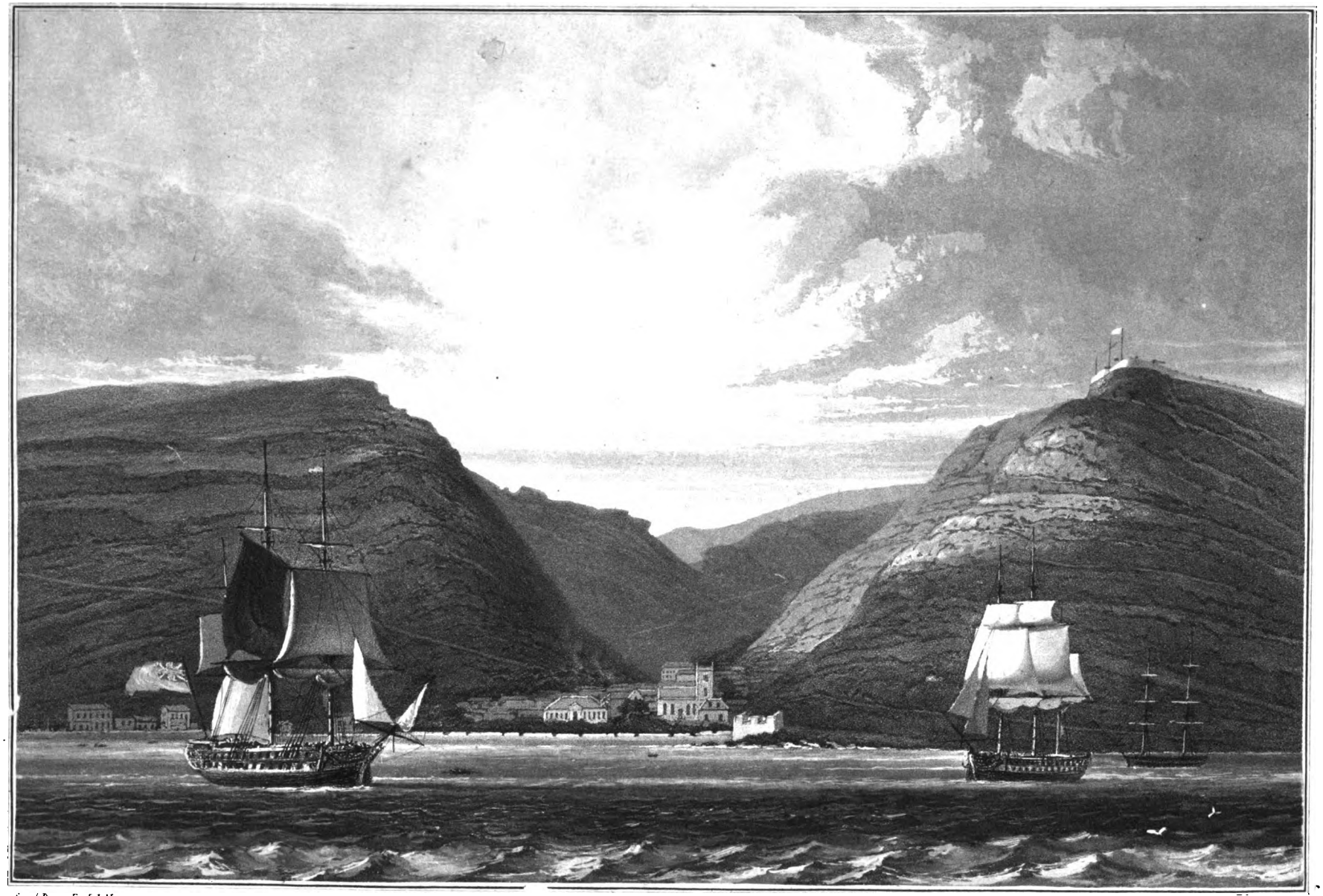

Sam.l Davis Esq.r del.t

Wm Daniell fecit

James Town St. Helena.

Published by G. & W. Nicol, Pall Mall Nov.r 30. 1815.

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TRACTS

RELATIVE TO

THE ISLAND OF ST. HELENA;

WRITTEN DURING A RESIDENCE OF FIVE YEARS.

BY

MAJOR-GENERAL ALEXANDER BEATSON,

LATE GOVERNOR, &c. &c. &c.

ILLUSTRATED WITH VIEWS

ENGRAVED BY MR. WILLIAM DANIELL, FROM THE DRAWINGS OF SAMUEL DAVIS, ESQ.

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TO

THE HONOURABLE

THE COURT OF DIRECTORS

FOR

THE AFFAIRS OF THE UNITED EAST INDIA COMPANY,

THE FOLLOWING TRACTS,

RELATIVE TO THE ISLAND OF ST. HELENA,

ARE RESPECTFULLY INSCRIBED,

BY THEIR MOST FAITHFUL AND DEVOTED

HUMBLE SERVANT,

ALEXANDER BEATSON.

London:
1*st January*, 1816.

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PREFACE.

It had long been very generally supposed that St. Helena was a rocky and unproductive island; mostly devoid of soil; scantily supplied with water; subject to severe and unusual droughts; abounding with rats, and wholly incapable of extensive cultivation, or improvement.

Whether these notions have originated with early writers, or in hearsay information of passing visitors, or in wilful misrepresentation to answer particular ends, it is unnecessary in this place to enquire. It will be sufficient to observe, that they were very prevalent, both in England and at St. Helena, at the period of my appointment to the Government; and that soon after my arrival, having reason to believe they were neither supported by facts nor appearances, I considered it my duty fully to investigate the whole; so as to ascertain whether or not those obstacles to improvement really did exist.

The means that were pursued will be found interspersed throughout the first part of this Work. The results have been most satisfactory; for they have not only exposed the fallacy of all such notions, but have most clearly demonstrated that many parts of St. Helena, so far from being desolate and barren, are pre-eminently fertile; that the island, in general, is capable of

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the highest improvements, both in the cultivation of corn, and all sorts of vegetables; and in raising valuable plantations of fruit and timber trees.

Being aware that investigations of this nature could only be interesting to a few, and that there are certain points on which information will naturally be expected in a work treating of St. Helena, I have therefore endeavoured to adapt it to a more general class of readers. Accordingly, I have prefixed an Introductory Chapter, which comprises Geological Facts, tending to illustrate the primary formation of the island; Observations on its Mineral and Vegetable Productions; Soil and Climate, and Seasons; capabilities of Improvement, and on its singular Strength and Security as a Military Station.

These additional subjects, together with a detailed account of the Mutiny in 1811 (the only historical event deserving notice since the year 1808), and a List of Indigenous and Exotic Plants growing at St. Helena, and some other matters contained in the Appendix, will put the reader in full possession of every material fact that has come to my knowledge, or that has occurred, during my residence of five years. The whole is illustrated by Six Views of the most interesting parts, and by a Geological Plan and Elevation. I therefore indulge a hope, that this attempt to convey to the public more just ideas of this extraordinary island, may prove acceptable.

The List of Plants, or a Flora of the island, was communicated by my deceased friend Doctor Roxburgh, a few days before his death. It is therefore the last work of that indefatigable botanist; whose meritorious exertions in improving botanical science, and

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in applying it to useful economical purposes, are well known to the public.

The Views are engraved by that excellent artist Mr. W. Daniell, from the drawings of my friend Samuel Davis, Esq. They are most faithful representations, and are peculiarly valuable, as illustrations of the geological and military observations.

The Plan and Elevation of the Island are compiled from the Survey, and the measurement of heights, taken by Major Rennell; and from some other documents.

In a book entitled "Tracts," I did not deem it necessary to touch upon the history of St. Helena: I wished also to preserve uniformity, by confining this work *wholly* to subjects that have never yet appeared before the public; and to prevent enlarging it beyond the bounds I had prescribed. To those who are desirous of information upon the localities of the island, from the period of its discovery to the year 1807, I beg to recommend to their perusal Mr. Brooke's History of St. Helena, published in 1808; which is drawn from the most authentic sources, and is replete with accurate information.

In attempting to introduce improvements upon an island where the arts of agriculture were little understood; where lands were cultivated by manual labour, without the aid of animals; and where prejudices in favour of old customs were strong, it was obvious there could be no hope of amendment without the evidence of successful examples.

It was therefore necessary to have recourse to experiments. Ploughs, and other implements were introduced; the labouring population was increased by the introduction of about three hundred Chinese; and an improved system of husbandry was carried

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on, under the direction of an experienced Norfolk farmer. But it was a long time before the generality of the islanders would even look at these improvements.* They regarded them as "mere foolishness;" said "they might do very well in Eng-"land; but that in a mountainous country the plough could "never answer; that their forefathers had done very well with the "hoe, and they saw no use or necessity for these new things."

At length, however, when they did perceive the facility with which extensive fields were broken up; the rapidity with which they were prepared by the plough, and the excellent crops of potatoes and corn that were raised, they acknowledged the superiority of English farming; and many of the most respectable soon afterwards followed the example.

Besides giving examples in the use of the plough, and in the new culture of potatoes, and of corn, it was deemed proper to explain the principles, and to point out the advantages of the new husbandry. With this view, I prepared short agricultural essays, (detailing the progress and results of the experiments) which were printed, for general information, in the St. Helena Monthly Register. Thirty of those essays have been selected for the First Part of this Work. They are placed in the order in which they were written. The Table of Contents points out the sections wherein the several subjects are at first discussed, or afterwards resumed; so that no inconvenience can arise from this arrangement: on the contrary, it was the only mode of shewing the progressive steps that were taken to convey useful information to the landholders; and to excite amongst them a spirit of emulation in cultivation and planting.

* Section XIII. p. 81.

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The complete success which has attended my efforts to improve the husbandry of St. Helena; and, above all, to substitute the plough for the spade and hoe, are circumstances not undeserving the attention of those who have valuable estates in the West India islands. According to Mr. Bryan Edwards's statement, founded upon his own experience, it appears, that by using the plough, in the operation of *holing* a sugar plantation, the labour of slaves is only about one-twentieth part of that which is required when the same work is performed by the hoe. In breaking up lands, and preparing them for corn and potatoe crops at St. Helena, it might easily be proved, that the reduction of manual labour, by the use of the plough, has been in a much greater proportion.

If, then, the plough were employed wherever the nature of the lands will admit, in all those countries where the hoe is in general use, and consequently where the demand for manual labour is excessive, it seems reasonable to infer, that such a change would be productive of infinite advantage. The necessity for manual labour would thereby be reduced, and the bodily fatigue of the unfortunate slaves would be lessened; which would, in all probability, lead to a greater increase of the present stock. By such means, all those inconveniences, whether real or imaginary, that are apprehended from the abolition of the Slave Trade, might, in the course of a few years, be effectually removed.

Since the abolition of slavery at St. Helena, which took place in the year 1792, there has been an augmentation in the black population, which consists of three classes: the slaves of indivi-

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duals; the Company's slaves; and free blacks. It was intended to have shewn the actual augmentation during a period of nineteen years, that is, since 1793: but, upon examining the lists in my possession, it was found that, until the year 1803, the Company's slaves and free blacks were excluded. On this account I have been obliged to confine the comparison to the period between the years 1803 and 1812; by which there appears to have been an increase of 148 from a stock of 1539 men, women, and children. (*See Appendix* II.)

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DIRECTIONS TO THE BINDER, AND DESCRIPTION OF THE PLATES.

I. . . . . JAMES TOWN, ST. HELENA, *to face the Title-page.*

ON the left is Rupert's Hill, at the base of which are seen several buildings on the wharf. Towards the centre is the fleur d'eau battery, behind which stands the Governor's town residence, called the Castle. To the right of the castle is the church and other buildings in the town. The mountain on the right is Ladder Hill, surmounted by fortifications; which completely command the town and anchorage.

II. . . . JAMES TOWN AND LADDER HILL, *to face the first page of the Introductory Chapter.*

THIS View is taken from the wharf. It also represents the fleur d'eau battery, and the same buildings behind it, as in No. I.; together with the commanding fort of Ladder Hill, and the zig-zag roads leading to it from the town. The white object on the right, a little way up the hill, and just above the bow of the boat, is *Patton's* Battery.

III. THE LINES ACROSS THE FRONT OF JAMES TOWN, *to face page* lxxxviii.

THIS View is taken from the west extreme of the lines. The declination of the strata of Rupert's Hill is accurately represented, which could not be shewn in the two preceding Views, owing to the farther parts of the hills receding from the point of sight. On the left extreme is Munden's Battery, with a flag upon it; and along the wharf is nearly a front view of the several houses, store-rooms, and cranes.

IV. JAMES TOWN VIEWED FROM THE ROAD TO LONGWOOD, *to face page* 58.

THIS View conveys a perfect idea of the position of James Town, situated in a narrow valley between two hills. On the left is Ladder Hill, with its fortifications, opposite to which is Rupert's Hill. The

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whole of the path, which leads from the town, is completely commanded by the cannon of Ladder Hill, Saddle Battery, and High Knoll. The last fort is not seen, but it is situated about 400 yards on the left of the point from which this View is taken.

V. THE WATERFALL AT THE HEAD OF JAMES'S VALLEY, *to face page* 110.

THIS is a beautiful object close to, and within sight of the Briars, at present the residence of William Balcombe, Esq. The mountain of High Knoll, rising abruptly at the distance of about four hundred yards from the Briars, and the opposite craggy hill, give a wildness and grandeur to this scenery which surpasses every other on this romantic island.

VI. . . . . VIEW TOWARDS SANDY BAY, *to face page* 200.

IN the fore-ground is *Mount Pleasant*, the country residence of W. W. Doveton, Esq. On the left of his dwelling is a singular perpendicular rock of great height, named *Lott*. The back-ground of this view is composed of rugged and barren hills, totally denuded, although it appears by the official records, that in former times they abounded with ebony trees. It is remarkable that on the summit of *Lott*, some trees remain which have escaped the depredations of the goats.

VII. GEOLOGICAL PLAN AND ELEVATION OF ST. HELENA, *to face page* 292.

THE Plan is compiled from Major Rennell's Survey, and other documents. The elevation represents the altitudes, above the sea, according to his measurements; which are as follows.

Diana's Peak - -	2700 feet.
Cuckold's Point - -	2672
Halley's Mount - - -	2467
Flag Staff - -	2272
The Barn - - -	2015
Alarm House - -	1960
High Knoll - - - -	1903
Long Wood House - -	1762

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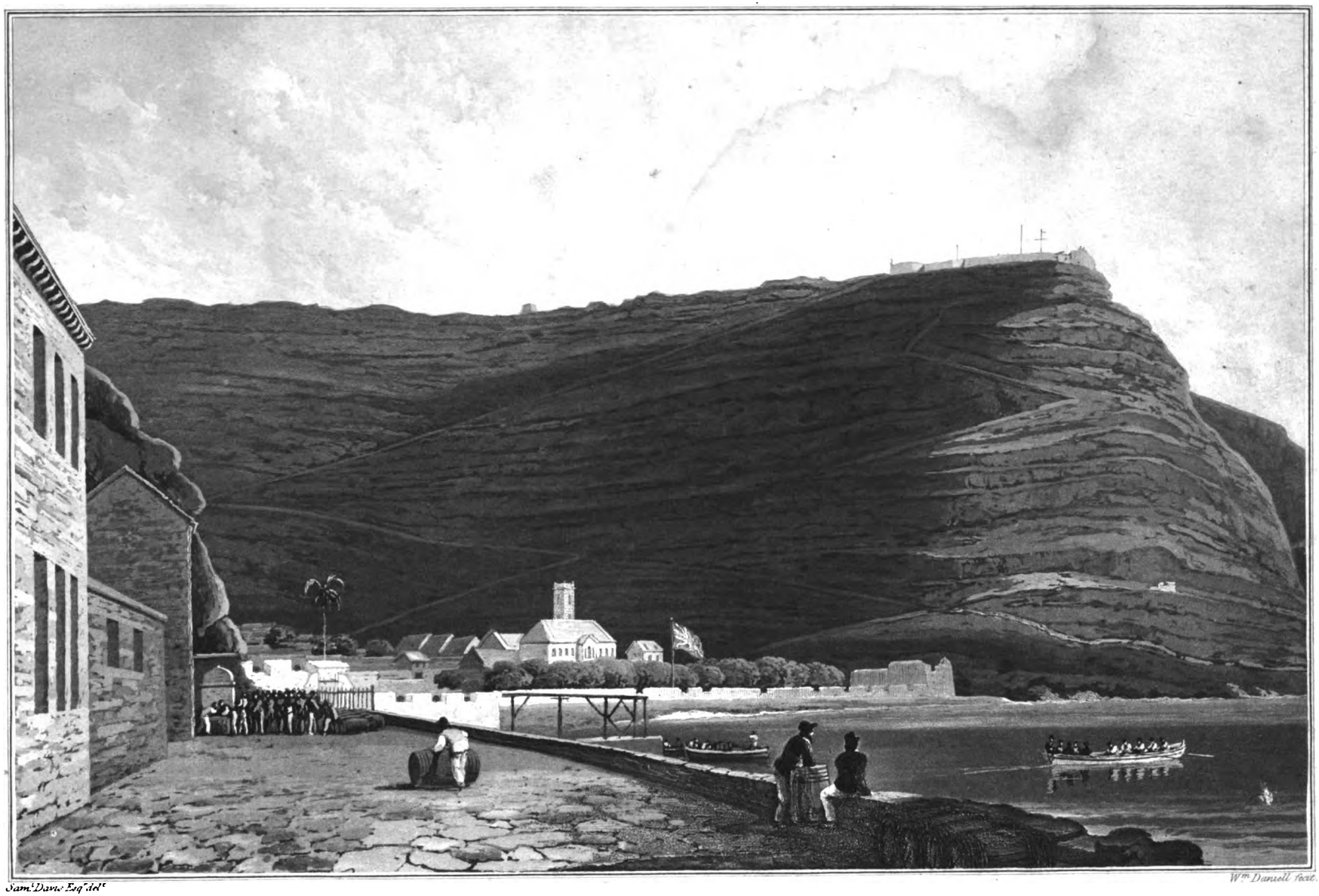

Sam.l Davis Esq.r del.t

Wm. Daniell Sculp.

James town & Ladder hill. St. Helena.

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INTRODUCTORY CHAPTER.

THE Island of St. Helena being extremely remote from all continental land and other islands,* and so very singular in its appearance and structure, has been justly considered a proper subject for philosophic investigation.

Of its primary formation different opinions are entertained. Some ascribe its elevation above the surface of the ocean, wholly to subterranean operations: whilst others contend, from the striking dissimilarity between the exterior and interior parts, that it is the remnant of a large island, of which the greater part has been sunk under water by the force of earthquakes and volcanoes.

Although conjectures of this sort are sometimes founded upon rather a superficial view of things, and without that knowledge of facts which can alone lead to probable conclusions, yet, from all I have observed, during a residence of five years, it seems to me that the last of these conjectures, which is that adopted by Mr. Forster, is the most plausible.

If this conjecture could by any means be satisfactorily verified from the facts I am about to relate (some of which have hitherto wholly escaped notice) it seems to me that it would be highly

* St. Helena is distant 1200 miles from the Coast of Africa; 1800 from South America; 600 from the Isle of Ascension; and 1200 from Tristan d'Acunha and Gough's island.

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important in the progress of geology. It is well known that islands have emerged from the sea ;* but we have no record (excepting the tradition of the *Atlantica Insula*) of the immersion of any large portion of land by the effects of volcanoes and earthquakes.

In viewing the hills on the east and west sides of James's Town from the anchorage, particularly the north end of Ladder Hill, we observe numerous strata rising from the base to the summit (600 feet above the level of the sea) which bear evident marks that the whole of this huge mass, extending several hundred yards to the westward, has been formed by a long series of floating lava.

The extreme ends of the strata on the coast, are placed horizontally: but upon examining the sides of the hills, the lava seems to have descended, at a depression of about 20 degrees, and apparently from a crater somewhere about the site of the waterfall.†

Of this crater no positive vestige remains: yet there are some appearances which might lead to a supposition that the present waterfall may have been its southern edge, or extremity—that it was bounded on the north-west by High Knoll, and that subsequently to the formation of that mountain and Ladder Hill, some tremendous explosion opened a chasm, extending from the sea to the waterfall, and at the same moment, by tearing away,

* In the year 1707 three or four islands were, by some violent convulsion, produced in the most southerly part of the Archipelago. The largest of these is called *Santorini*, and is as large as St. Helena, being ten leagues in circumference: but in other respects it seems totally different, being a rock of pumice stone, covered with only nine or twelve inches of earth.

† An exact representation of the waterfall is given in Plate II. The summit is 1250 feet above the level of the sea. The stream descends uninterruptedly, 260 feet.

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and precipitating, a large portion of High Knoll into the crater, may have extinguished it.

This conjecture is at least plausible (if not clearly verified) by the appearance of High Knoll. The western side is sloping, and the base of that part (extending more than 1200 yards from north to south) rests upon the surface of Ladder Hill; whilst the eastern side is a stupendous precipitous cliff, the foot of which stands in James's Valley, at least 260 feet lower than the opposite base on Ladder Hill. In short, High Knoll, which rises 1903 feet above the level of the sea, is decidedly but a fragment of what it has originally been. One third at least of this mountain has been precipitated to the eastward, apparently close to the water-fall, and into that very spot whence the eruptions of lava seem to have proceeded, and afterwards descended, even to the northern extremity of Ladder Hill: a distance of 3000 yards. The disruption of High Knoll has exposed to view many layers of lava, from the base almost to the summit, which may be traced throughout the whole distance to the north extreme of Ladder Hill. Hence it seems reasonable to infer that High Knoll was raised by the eruptions of a volcano.

The strata on the east side of Ladder Hill point directly to High Knoll and the waterfall: and it is remarkable that there are several layers near to High Knoll, high up the cliffs, from which salt springs ooze, and more especially during the rainy seasons. These layers have the same declination as the other strata.

There is moreover a very singular vein of red clay on the eastern side, and near the summit of Ladder Hill (two hundred yards above the level of the sea) which corresponds in dimensions, elevation, and colour, with another vein on the opposite hill. Several strata of slimy mud, very strongly impregnated with marine salt, are also to be seen on the same face of Ladder Hill; one at the

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perpendicular height of 30, and another at 300 feet. Hence it may be inferred, more especially from the correspondency of the veins of red clay, that some violent convulsion has laid open the chasm which is now called James's Valley.

Although, from all these circumstances, it seems almost demonstratively certain that the hills on each side of James's Valley have been gradually raised by eruptions from a volcano, succeeded some time after by tremendous shocks, yet upon viewing many other parts of the coast, and the interior of the island, we find no such decisive indications from which a similar deduction can be formed: but there are many indubitable proofs of considerable agitations, or changes, apparently unaccompanied with volcanic eruption.

The most plausible arguments in support of Mr. Forster's opinion, "that *St. Helena has undergone a great and total "change from a volcano and earthquake, which perhaps sunk the "greatest part of it in the sea,*" may be adduced from the circumstances of the Great Wood; now called the Plain of Long Wood and Dead Wood.

This plain, comprising 1500 acres of fine land, is elevated 2000 feet above the sea, and slopes gently towards the south-east. In former times it was covered with wood, and was therefore called "The Great Wood." So late as the year 1716, there were many trees upon it: but in 1724 the old trees had mostly fallen; and, as goats and hogs were at that time suffered to range, all the young trees were devoured. It appears also by the official records that the trees were, unexpectedly, some years after, succeeded by indigenous wire grass;* which now spreads over its whole extent.

* On the consultation dated the 4th March, 1724, it is stated that grass was well grown on the Great Wood—and the Government ordered cattle to be pastured there: but on

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How this extensive and beautiful plain could have escaped in a general devastation, is a question not easily to be solved. Its gentle slope, and smooth and even surface, and its fertility, present so striking a contrast to all the surrounding parts, that one might be disposed to believe it a remnant of primitive land, which has remained, untouched and unshaken, amidst all those dreadful convulsions which have agitated and overturned every thing in its vicinity: or it might, with some plausibility, be considered a part of "those countries where the earth appears in a "rude state—where every place capable of producing trees is "totally covered with wood." †

About a mile and a half to the eastward of Long Wood House, there are the remains of many gum-wood trees. Nothing is left but the roots and a few inches of bark. Wherefore, it seems highly probable that the Great Wood may have been of much larger extent; and that it also covered the flat piece of land between Long Wood and the sea: in this case, the whole of the Great Wood must have occupied a space of not less than two thousand acres.

It seems to me that the circumstances of this plain may be of some importance to the science of geology; because it affords a curious and singular contrast, and comparison, with every other part of the island. If such a comparison were undertaken by a skilful geologist, it might lead to some valuable discoveries; or, at least, plausible deductions—not merely concerning the original formation of St. Helena, but of islands in general.

the 11th of the same month it is further stated that this information was not correct—and the cattle were accordingly ordered to be removed. These are curious facts, since they trace the changes which this remarkable spot of land has undergone: for now, this formerly naked plain (after the trees had fallen) is covered with a fine sward, and is become the finest piece of pasture on the island.

† M. Buffon.

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The first notice on record of this plain, is by Governor Roberts; who, in a minute of consultation, dated the 9th of April, 1711, denominates it, " that glorious plain—the finest I ever saw in " my life, any where."

It is afterwards more particularly described by the Governor and Council on the 16th October, 1716, in their minutes of a consultation held upon the spot.

" The Governor and Council met here by appointment. We " find the place, called the Great Wood, in a flourishing condi- " tion, full of young trees, where the hogs (of which there is a " great abundance) do not come to root them up: but the Great " Wood is miserably lessened and destroyed within our memories; " and is not near the circuit and length it was. We believe it " does not contain less now than fifteen hundred acres of fine " wood land and good ground; there are no springs of water " but what are salt or brackish; which we take to be the reason " that this part was not inhabited when the people first chose out " their settlements and made plantations: but if wells could be " sunk,* which the Governor says he will attempt when we have " more hands, we should then think it the most pleasant, and " healthiest part of the island. But as to healthiness we don't " think 'twill hold so, if the wood that keeps the land warm were " destroyed; for then the rains, which are violent here, would " carry away the upper soil; and it being a clay marle† under- " neath it would produce but little.‡ As it is, we think in case

* The sloping surface of Dead Wood is peculiarly favourable for collecting water into tanks or reservoirs. The means of collecting it in the driest parts of the island are explained in Section XXIX. page 198.

† This is a mistake: there is no sort of marle on the island.

‡ This conjecture has proved to be erroneous; the grass binds the soil, which is not in the least affected by the heaviest rains.

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" it were enclosed, it might be greatly improved; but doing that " would require many hands, the stone, most of it being to be " brought a good distance,*— but the ground being near to a " level for above five hundred acres of it, carts may be used. The " enclosing the whole, we think, would be too great an attempt " to begin at once; yet we think nothing more proper than to " enclose some of the best part, for when once this wood is gone " the island will soon be ruined."

No traces of lava nor shells are to be seen on this plain, nor under its surface: throughout its whole extent there is seldom to be found a stone, of any sort, larger than a walnut: but in digging ditches for the fences at Long Wood, we lately discovered considerable beds of small stones resembling gravel. They are, however, a sort of soft iron stone, easily pulverised: some are close to the surface, others a foot or two underneath; and it has been observed that the crops are always more exuberant where the soil is intermixed with these stones.

The plough might therefore range over at least 1200 acres of this plain, without meeting with the smallest impediment. The soil is excellent, and, in many places, of great depth. This was ascertained by the Lieutenant Governor, who resided there some years ago, in making an unsuccessful attempt to find water. In a ravine, many feet below the surface of the plain, he dug a pit 80 feet deep: in which nothing was found but the same fine soil, composed of mould and friable clay.

Indeed, if we may judge from a deep ravine, which partly divides the plains of Long Wood and Dead Wood, the soil and substratum of friable clay in this part of the island may very

* It is remarkable that upon the eastern side of this "rocky island," there are no good quarries: the only stone to be found, and that is a mile to the westward of Long Wood, is a kind of indurated clay.

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possibly be several hundred feet deep. This ravine has evidently been formed by torrents of rain, which, in the course of ages have opened a large hollow, more than 500 feet across, and about 150 deep; the sides of this hollow expose to view an infinite number and variety of beautiful layers of coloured earths, which are supposed to be of volcanic origin. I am, however, inclined to believe that the colours are only superficial: this will be noticed hereafter.

But, it is not merely in this eastern part of the island that there is soil of extraordinary depth. At the Plantation House, the country residence of the Governor, which is 1700 feet above the sea, and four miles west from Long Wood, I ascertained to the depth of 25 feet, that the soil is uniformly of the same fine quality as the upper stratum; and probably it may be so to a far greater depth.

These accounts of the depth of soil, and of the fine plain of Long Wood and Dead Wood, will no doubt surprise many who have been taught to believe, that "St. Helena is a barren and "unproductive rock:" indeed it will be seen by many facts stated in the first part of this work, that its lands, of which 2 or 3000 acres might be ploughed with the greatest facility (and even much more brought into cultivation) are not inferior in the production of wheat and every other grain, and of potatoes and all sorts of esculents, to the very best lands in Europe.* The annual produce is indeed much greater, on account of the certainty of two seasons of rain, and two harvests in the year.

From what has been noticed of the depth of soil, it seems at least probable that neither the plain of Long Wood and Dead Wood, nor the lands in the vicinity of Plantation House, have ever been touched by volcanic eruptions: otherwise some traces

* See Appendix III.

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would at this day have remained; and notwithstanding there be evident marks of some parts of the exterior boundary of St. Helena having been formed by lava, and afterwards rent open and changed by subterraneous convulsion, yet, upon the whole, there appears to be strong grounds for supposing that the finest parts of the interior are the remnants of primitive land.

Although the plain above-mentioned appears to have escaped in the general devastation, yet in its vicinity are evident traces of the most terrible agitations. The *Devil's Punch Bowl,** on the west—numerous dreary and barren conical hills on the north, between the plain and the sea, and the deep chasms at Turk's Cap, and Prosperous Bay, are indubitable proofs that all those parts have been violently convulsed: but perhaps the most unaccountable of the whole is, that amidst so much disorder and confusion there should remain a piece of level land which measures 200 acres.

This remarkable spot is situated a little to the south of the Great Wood, and half a mile west from the promontory on which the Prosperous Bay telegraph is erected. It is elevated 5 or 600 feet above the level of the sea; and is encompassed by low hills on the south and east, and rather open towards the other points. The soil is mud, and very strongly impregnated with salt: nothing grows upon it but marine plants. A water-spout which deluged the island in March 1786, left a sheet of water, which lay upon this flat for five or six days afterwards. How so large a portion of land could have been raised to so great an elevation, without

* The Devil's Punch Bowl extends nearly from Halley's mount to Long Wood. It is an immense hollow which, in certain points of view, assumes a circular appearance; and hence its name. It is 1000 yards from east to west, 700 across, and about 250 yards in depth. The sides are steep, excepting on the west, where there is some projecting land, on which stand a house and garden. It is the head of Rupert's Valley.

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deranging its original level seems to be more inexplicable than the formation of all the surrounding parts. These are indeed nothing more than what is common to many islands, and to many other parts of the terrestrial globe. The corresponding strata of the opposite shores of Britain and France, leave no room to doubt but they were once united. The stratum of shells and mud on the hills at Agrigentum, three miles from the harbour, and 1200 feet above the sea, the oyster-shells found on the high mountains in Jamaica, the fossil bones of elephants found by Mr. Humboldt, on the Andes, 3280 yards above the level of the sea, and many other instances that might be adduced, serve only to furnish most incontestable proof that this globe has undergone many surprising changes since it was first created.

There are some other circumstances which seem to have escaped the notice of those who have written upon St. Helena, arising probably from having taken too short a time to explore it; or from not being able to obtain information. Their accounts have certainly led to several erroneous impressions.

For my own part, I perfectly recollect the idea I had formed of this place before I resided upon it. I considered it merely as a rocky island, *rising abruptly out of the ocean*, and having an unfathomable depth all around it; excepting at James's Bay and Sandy Bay, where the anchorage grounds, as I then imagined, had been formed by the deposition of soil washed down by the rains.

Such were my own ideas from the accounts I had read and heard; and as I have very strong reason to believe that this is the general notion of St. Helena, at the present time, it is proper I should enter a little more into its local and physical circumstances.

That part of St. Helena, *which is elevated above water*, measures $10\frac{1}{2}$ miles long, $6\frac{3}{4}$ broad, and is 28 miles in circumference. The

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coast is on all sides formed by stupendous and almost perpendicular cliffs, rising to the height of from six to more than twelve hundred feet. The principal accessible inlets are at James's Town, Rupert's Bay, Lemon Valley and Sandy Bay: all these have been strongly fortified. Several reefs of rocks, called ledges, jut out, to the distance of two to four miles; others are detached, some commencing at half a mile or more; and there is one in particular called "New Ledge Fishing Bank," whose outer edge, or extremity, is said to be not less than nine miles distant from the coast. The soundings, at the farthest part, are 45 to 70 fathoms.

Besides these Ledges there are several detached rocks or small islands at a little distance; of which the principal are *Egg Island*, *Speery*, and *George's Island*. All these, excepting the last, which is on the south-east, are situated to the west or south-west; and as the New Ledge, which is the largest of the Ledges, or fishing banks, trends in that direction, it may be presumed that this is also the direction of the higher part of the projecting base of the island under water.

In respect to the depth of water on the south and east, I have no particular information—perhaps being to windward of the island, and not so convenient to the fishing boats, may be the reason that those parts have not been hitherto explored.

According to a minute survey, taken by Captain Austin of the Royal Navy, along the northern face of the island, the bottom of the sea, extending from Flag-staff Bay to Horse-pasture Point, comprising about 16 square miles, shelves very gradually. Three miles north of the coast at *Flag-staff* there is ground at 82 fathoms; and at three-quarters of a mile from *Horse-pasture*, there are 36 fathoms. It appears also by this survey that the bottom is in general, smooth and even; consisting of mud, mud and shells,

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sand with specks, here and there coral, and at one or two places, rock. But, in sounding to the westward the surface was found by Captains Cowan and Beville* more irregular; and apparently resembling the surface of the island, consisting of hollows and ridges.

Hence it is evident that this island, resting upon a base, which extends at least 25 miles from east to west, is not "a rock rising "abruptly," as had been erroneously supposed; but is rather the pinnacle of a prominence in the bed of the ocean, gradually ascending, from unfathomable depths, to 2700 feet above water: which is the elevation of Diana's Peak, the highest mountain on the island.

This deduction seems consonant to the opinions of some theorists, who have considered "islands as the tops of lofty mountains; "the eminences of a great continent, converted into islands by a "tremendous concussion of nature:"† but whether the circumstances, above stated, may be in any way useful to geologists, or whether they may throw further light upon the origin and formation of islands, or lead to new conjectures upon the probable site of the *Atlantica Insula*, mentioned by Plato, to have been partially destroyed by an earthquake and deluge, I shall not presume to say.

If, however, any large island ever did exist in the part of the Atlantic under consideration, it might be inferred, according to those theorists, that the islands of *St. Helena*, *Ascension*, *Saxemberg*, *Tristan d'Acunha*, and *Gough's Island*, may have been its "lofty mountains and eminences;" and that the whole space within that chain of islands, which is 1800 miles in length, and about 500 in breadth, has been sunk into the sea.

* Commanders of the Camperdown cutter.

† L'Abbé Raynal, L'Abbé Pluche, and others.

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It is very remarkable, and well deserving the attention of naturalists, that a species of gum-wood tree (*Conyza gummifera*), which is indigenous to the climate of St. Helena, and which has not, I believe, been discovered upon the opposite continent of Africa, has been found upon *Gough's Island* and *Tristan d'Acunha*. I have in my possession a sketch of the Island of Saxemberg, upon which some trees are also represented; of what sort I am not informed. But, if it should be ascertained hereafter, that they are of the same species as those on the other three islands, this might be an additional reason for supposing that all those islands, and perhaps Ascension, which has now no trees upon it, may have been, at some remote period, united.

If the possibility of this connection be, for a moment, admitted, the question of immersion, according to M. Buffon's hypothesis, might readily be solved. "History," says this celebrated naturalist, "informs us of inundations and deluges of an extensive "nature. Ought not all this to convince us, that the surface of "the earth has experienced very great revolutions? Let us sup- "pose, for example, that the old and new worlds were formerly "but one continent; and that, by an earthquake, the ancient "Atlantis of Plato was sunk; the consequence of this mighty "revolution must necessarily be, that the sea would rush in from "all quarters, and form what is now called the Atlantic Ocean."

Having now adverted to such circumstances as appear to substantiate the opinion entertained by Mr. Forster, that St. Helena must have existed above water, before it had a volcano, and was afterwards violently changed, and partly subverted by subterraneous fire, it may be proper to shew in what manner this writer supports and illustrates that opinion by the appearances of Ascension and St. Helena.

"The dreariness of *Ascension*," says Mr. Forster, "surpassed

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" all the horrors of *Easter Island*, and *Terra del Fuego*, even " without the assistance of snow. It was a ruinous heap of rocks, " changed by the fire of a volcano. Nearly in the centre of the " island, rises a broad, white mountain of great height, on which " we discovered some verdure by the help of our glasses, from " whence it has obtained the name of *Green Mountain*. On land- " ing, we ascended among heaps of black cavernous stone, which " perfectly resembles the most common lavas of *Vesuvius* and " *Iceland*; and of which the broken pieces looked as if they had " been accumulated by art. The lava currents, cooling very " suddenly, may easily be imagined to produce such an effect. " Having ascended about fifteen yards perpendicular, we found " ourselves on a great level plain of six or eight miles in circuit; " in one corner of which, we observed a large hill of an exact " conical shape, and of a reddish colour, standing perfectly " insulated. Part of the plain between those hills was covered " with great numbers of smaller hillocks, consisting of the same " wild and rugged lava as that near the sea, and ringing like " glass, when two pieces are knocked together. The ground " between the heaps of lava was covered with black earth; but " where these heaps did not appear, the whole was red earth. " The conic hills consisted of a very different sort of lava, which " was red, soft, and crumbling into earth. We concluded, that " the plain on which we stood was once the crater, or seat of a " volcano, by the accumulation of whose cinders and pumice- " stones, the conic hills had been gradually formed; and that " the currents of lava, which we now saw, divided into many " heaps, had perhaps been gradually buried in fresh cinders and " ashes; and the waters coming down from the interior moun- " tains, in the rainy season, had smoothened every thing in their " way, and filled up by degrees the cavity of the crater. The

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" rocky black lava was the residence of numberless man-of-war " birds and boobies, which sat on their eggs, and suffered us to " come close to them. On all this rocky ground, we only met " with ten shrivelled plants, which were of two sorts, a species of " spurge and a bind weed.

" Having climbed over an extensive and tremendous current " of lava, more solid than that near the shore, we came to the foot " of the *Green Mountain*, which even from the ship, we had " plainly distinguished to be of a different nature from the rest " of the country. The lava which surrounded it, was covered " with a prodigious quantity of purslane and a kind of new fern. " The great mountain is divided in its extremities, by various " clifts into several bodies; but in the centre they all unite and " form one broad mass of great height. The whole appears to " consist of a gritty tophaceous lime-stone, which has never been " attacked by the volcano, but probably existed prior to its " eruption.

" *St. Helena* has on its outside, especially where the ships lie " at anchor, an appearance, if possible, more dreadful and dreary " than *Ascension*: but the further you advance, the less desolate " the country appears, and the most interior parts are always " covered with plants, trees, and verdure. However, there are " every where the most evident marks of its having undergone a " great and total change, from a volcano and earthquake, which " perhaps sunk the greatest part of it in the sea.

" We visited (says the same author) isles that had still volca- " noes burning; others that had only elevation, and marks of " being formed in remote ages by a volcano; and lastly, we " found isles that had no remains of a volcano, but strong and " undoubted vestiges of having been *violently changed* and *partly* " *overturned by an earthquake, subterraneous fire, and a volcano.*

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" I cannot help referring *Easter Island, St. Helena,* and *Ascen-*
" *sion,* to the last."

The circumstances which have been noticed concerning the strata of Ladder Hill and High Knoll, cannot, I presume, admit of a doubt, that those parts have undergone a great change since the island was formed ; and that this change has been effected by eruptions from a volcano, succeeded by an earthquake. But, whether those other changes, which are visible in many other parts have been produced by similar causes, or subterraneous fire, it is perhaps wholly impossible to ascertain: nor does it even seem probable, that the effects from either, or from all these causes, could have left the island in the state it now is.

There is a central ridge, as will be seen by the annexed sketch, which, running east and west, divides the island into, nearly, two equal portions. In no part of this ridge (which is elevated 2000 feet above the level of the sea) is there a single chasm or opening. It seems, therefore, wholly unaccountable that it should have escaped being broken and shattered, if earthquakes, or subterranean fires, had occasioned the " overturnings." This ridge is narrow on the top; and very abrupt on the south, especially between Diana's Peak and Manatee Bay. It continues eastward to the Devil's Punch Bowl, where it again narrows, and then spreads out and forms the Great Wood Plain. At the Punch Bowl it becomes so narrow that it seems nearly to have been broken: yet the whole extent, including the Great Wood, has stood fast, in spite of all appearances of disruption on either side.

When the island was discovered (three hundred and thirteen years ago), it is said, there were no living animals upon it; and that seals, sea-lions, turtle, and sea-fowl, occasionally frequented its shores. All this is perfectly reconcileable to the idea that

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St. Helena is a new land, raised from the bed of the ocean. But if we admit this to be the fact, how are we to account for the origin of the present insect tribe; which are pretty numerous, consisting of various sorts of beetles, grubs, and worms? If these did not exist at the period of discovery, there seems to be no other mode of explaining their present existence, than by reviving the exploded doctrine of equivocal or spontaneous generation. Under this difficulty, it may possibly be inferred, that these sorts of insects actually must have existed: and, hence it would follow, as a natural consequence, that subterraneous fire, and volcanic eruption, have not been the sole causes of formation: because, in either case, no creature whatever could have remained alive.

The introduction of quadrupeds, domestic fowls, and birds, remaining at present, may be easily conceived.* There is, however, a species of land bird, inhabiting the interior, and found in considerable numbers, of which, I believe, no notice has ever been taken by any writer on St. Helena. It is of that description not likely to be brought there by shipping, and seems for this reason particularly to deserve attention. It is not a bird of passage, for it is seen throughout the year: indeed none of that description have ever found their way to St. Helena. In appearance, and size, and in some of its habits, it resembles the common sand-lark frequently seen on the shores of Europe. It is called the "Wire-Bird;" probably from its very long legs, resembling wires, which enable it to run with uncommon swiftness. The legs are of a greenish colour; the body and wings

* Domestic fowls of all countries thrive at St. Helena. Besides these, there are peacocks, guinea-fowls, pheasants, partridges, doves, parroquets, Java sparrows, canaries, and averdavats. All these have evidently been imported by shipping. There are also some rabbits, but no hares. The wire-bird, alone, is of that description which cannot be supposed to have been imported.

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gray; the breast white; eyes large, and the bill moderately long. In its nature it is rather shy; and as it does not seem to possess those powers of flight which could have brought it from America or Africa, it seems, therefore, not unreasonable to conclude, that it is indigenous to the island. If so, it may be considered as an additional fact, favourable to the conjecture that St. Helena is a fragment of a larger island.

I have already mentioned, upon the authority of Captain Heywood, who commanded his Majesty's ship Nereus, that the indigenous gum-wood trees of St. Helena are the same as on Tristan d'Acunha and Gough's Island. It would be of importance to ascertain with accuracy this fact; and whether the wire-bird be also a native of those islands, and of Ascension and Saxemberg. If all these points should be verified, trifling as they may appear, they would be important to the cause of geology.

The mountainous ridge which divides the island by its greatest length, appears chiefly to consist of indurated clay, in some parts surmounted, and in others mixed, with shattered rock; which, being of a brittle nature and easily broken, has never been perfected into solid stone. This clay may possibly appear to be the material which composes the greater part of the stones found on the island. It has no visible intermixture of sand, and is not tenacious, but friable. It is easily excavated in the form of buildings, with interior upright walls; and in this manner it is used for cart sheds, &c.

Towards the western extremity, within a mile of the coast, the ridge assumes a different appearance: it is there very abrupt, and craggy, on the south, and slopes gently to the north: here are solid rocks, from which large fragments have been detached and lie scattered on the surface. The most remarkable of these are at the west extreme of the ridge; where a great number,

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standing on end, occupy a flat of about three acres. From their striking resemblance to tomb-stones, this place is called "the church-yard." I examined it with attention, and was led to conclude that its very singular appearance has been occasioned by a water-spout, descending with fury; and by dashing out the soil and washing it down the adjacent ravine, has thus entirely uncovered the stones.

An attempt was made to form some of the stones, taken from the vicinity of the church-yard, into mill-stones: but being brittle and laminated, and withal extremely hard, it was found impossible to manufacture them. This sort of stone, when struck, emits an agreeable sound.

The sea-coast is generally bordered with rocks; and in its vicinity as well as in some parts of the interior, are excellent quarries of honeycomb stone and basaltes. The former being of a softer and tougher texture than the latter, is therefore esteemed by far the best on the island for buildings. Both, however, are evidently composed of the same material; that is, of the clay above-mentioned.

It seems to me that basaltes is changed into honeycomb by coming in contact with fire; for I have observed in many quarries an exterior coating of honeycomb passing so insensibly into an interior basaltic bed, and so intimately blended with it, that it was impossible to discover at what point the honeycomb ended, or the basaltes began.

The most remarkable quarry which I observed of this sort, is on the high road between High Knoll and Plantation-house. Here, upon viewing the exterior, it was expected to find a valuable quarry; but after penetrating a few feet into the hill, it was found that the honeycomb was insensibly blended with the basaltic stone. This fact seems to correspond with what is stated by Sir William Hamilton, "that basaltes is fusible *per se*; that

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" it agrees almost entirely with lava in elementary principles, in " its grain, and in all the diversities of its texture." And it seems also to afford a demonstration, that after St. Helena was formed, fires must have rushed through chasms and openings, and scorified the clays, and the *vertical* rocks of basaltes, in their primitive state.

Of the honeycomb stone at Ladder Hill, and near the Plantation-house, the Chinese, who are expert stone-cutters, have manufactured troughs, bowls, urns, pestles and mortars, and hand-mills. These last answer the purpose extremely well, leaving no grit in the flour. Wherefore, it may be presumed. that mill-stones in abundance, and of the largest dimensions, might be furnished from this island.

Honeycomb stone is likewise found in various other parts. At Halley's Mount, and in its vicinity, are two quarries of an imperfect kind. The one is on the eastern face of the mount, and the other on the ridge which forms the south-west edge of the Devil's Punch-bowl. The stones, particularly in the latter, have not attained the solidity of the more perfect sorts. At Halley's mount, amongst the cracks and fissures, are sometimes discovered bits of spar, and thin, hard, flaky substances, having small protuberances on their surfaces, exhibiting a variety of colours. It is remarkable, that on the western face of Halley's mount the rocks are of the same raw, shattered, and brittle sort, as those on the central ridge. Some indeed are of a consistence between clay and stone: and as there are no appearances of their having been touched with fire, it may be inferred that the Punch-bowl itself has been a crater, and that the flames issuing from it have scorched the eastern face of Halley's mount and formed the honeycomb stone, whilst the western face was in a manner hid from the flames; and thereby the stone and clay have been preserved in their primitive state. It is also deserving notice, that to

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the eastward of the Punch-bowl, and in the vicinity of the Great Wood plain, there is not to be found a stone, of any sort whatever, fit for the purpose of building. This seems to furnish a further proof, that all that portion of the island is of a different formation from the other parts.

On the surface of Ladder Hill are some beds of basaltes, producing flaky stones of extreme hardness. These lie horizontally, and when quarried, yield flags of from six to twelve superficial feet, and from four to ten inches in thickness. They are also sonorous; and as they require only to be squared, they are admirably adapted to the flooring of warehouses, granaries, and other buildings. In blasting some of the basaltic beds on Ladder Hill, both sides of the septa, or cracks, were sometimes covered with figures, apparently of metal; of a bright silver colour, beautifully representing trees and other objects of landscape.

On the western side of High Knoll there are quarries of a very different description. They produce a stone very much resembling the Tufa I have seen in Sicily. Indeed this stone, and the small pieces of very light pumice which are scattered at the northern base of High Knoll, and upon many parts of Ladder Hill, are the only sorts that bear the smallest resemblance to the productions of Etna, Strombolo, and Vesuvius. I had a complete collection of these in my possession, which enabled me to make the comparison.

The tufa, or red-stone of St. Helena, is of a brownish red colour. It is rather soft when taken out of the quarry, but hardens by exposure to the air, It has been used successfully in building; and in forming a water-course for supplying the garrison of Ladder Hill, from the springs at Plantation-house; and from the tank at High Knoll.*

* Part I. Sec. XXIX. page 199.

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There is moreover a very extensive quarry of pozzolana on the eastern side of James's valley, about a mile from the sea. In the year 1807, my predecessor, Governor Patton, to whose talents and indefatigable exertions the island is much indebted, first introduced this valuable ingredient in mortar cements. It was pointed out to his notice by M. Joinville, who had been attached to the suite of the Honourable Frederick North at Ceylon. This pozzolana, mixed with one-third of Sandy Bay lime, hardens in sea-water, and has withstood the beating of the waves for several years without being in the least degree diminished or affected. Even when used without any admixture of lime, or water, but merely after spreading it dry, and beating it well together, it soon consolidates after being moistened with rain into a mass almost resembling stone. In some parts of James's Town it has been used as a substitute for paving, and has been found to answer that purpose, not being liable to crack; nor is it in the least affected by the heaviest wheel carriages.

Limestone of excellent quality is in the greatest abundance.* It is said to be a concretion of shells and sand, and sometimes of clay. In consistence it is not harder than a sugar loaf, and is therefore easily calcined; one bushel of coals producing ten of lime. The mountains close to Sandy Bay, and not far above the level of the sea, are chiefly composed of it. Lot's Wife Beach, adjoining those mountains, is covered with a white sand, which consists almost wholly of small fragments of limestone. On the opposite side of the island, lime has also been discovered, particularly near Banks's Battery, and at Rupert's Bay, and, it is said, in Breakneck Valley. But there are neither shells, nor lime, nor any calcareous matter in the interior of the island.

At Rupert's Bay the limestone rocks project into the sea. It would seem that sea-water has a tendency to harden, or perhaps

* Part I. Sec. I. page 2.

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to form, this concretion; for upon tracing this vein, we found that it gradually and insensibly softens as it recedes from the beach: so that at the distance of thirty yards it assumes the appearance, and is in fact, a limestone sand.

Calcareous clays are found in James's valley and Friar's valley; and a calcareous spar, together with small oblong round stones, corresponding with the description of plaster of Paris, are found in considerable quantity in the hills adjoining Turk's Cap Bay, and Prosperous Bay. Here also has been discovered a variety of pebbles extremely hard, which bear a fine polish, and have been made into seals and ornaments.*

Calcareous spar is also found in the body of very hard and ponderous stone at Munden's Cove and Sandy Bay; and even in the interior of the island: and it is said, that on George's Island might be collected a considerable quantity of gypsum.

The following are the analyses, by the late Doctor Adam Baildon, of the lime quarries already opened. The specimens of plaster of Paris have not yet been analysed.

	Calcareous Earth.	Clay.	Sand.	
1 Banks's Lime - - -	41	6	53	
2 Rupert's hard sort - -	74	1	25	Too close to the Sea for working.
3 Ditto. Soft ditto -	63	1	36	
4 James's Valley - - -	54	42	4	
5 Friar's Valley - -	58	42	—	
6 Sandy Bay - - -	70	1	29	Exhausted.
7 Lot's Wife Beach - -	75	3	22	
8 Potatoe Bay - - -	71	1	28	In abundance.
9 Turk's Cap Spar - - -	98	—	2	
10 Ditto. Plaster of Paris -	—	—	—	Not analysed.

* Specimens of all these stones were forwarded to the Honourable the Court of Directors in December 1810.

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A species of natural cement is found on several parts of the coast of St. Helena, which seems to resemble that seen by M. Peron* on the coasts of the isles of Kangaroos, St. Peter, and St. Francis. This writer ascribes its formation, at these places, to numerous shells rolled incessantly by the action of the waves on the neighbouring shores; which being broken into very minute fragments, and mixed with quartzose sand, speedily constitute the principle of calcareous cement of a superior quality. The finest specimen I observed at St. Helena, is between Egg Island and Union Cove. The rocks bear evident marks of the action of fire. They resemble the refuse of iron at smelting places. There are also numerous pumice stones, and a sort of shingle scattered over the surface of these rocks. Some very hard stones are so firmly bedded in this cement, that, in attempting to take them out, they broke in pieces. If such a cement could artificially be made, it would undoubtedly be far superior to the Roman, or any other cement hitherto invented.

It seems to me that a likely mode of ascertaining the process of formation would be to imitate that which appears to have been the process of nature; that is, to collect a certain quantity of powdered St. Helena limestone, to mix it with small fragments of basaltic stone, the size of coarse sand, varying the proportions; then to sprinkle the mixtures occasionally with sea water, and leave them to dry in the sun. If these ingredients should not consolidate at first, the sprinkling of sea water should be continued; and possibly in the course of time, the consolidation might take place. This appears to have been the process of nature; for the natural cement bears an exact resemblance to mortar made with white lime, and an admixture of coarse black sand: but, as there is no sand on the coast, nor in the interior of the island, it may be

* Jour. de Phys. Vol. LIX.

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presumed that those black specks in the cement are merely fragments of basaltic, or pumice stones. If, however, the mixture I have suggested should not consolidate, there might then be reason to infer, that the calcareous matter laying on the rocks near Egg island, may have undergone calcination, at the time the rocks were in a state of fusion.

Along the coast of St. Helena are many deep excavations, forming caves, some of which are raised several feet above the high water mark, and afford commodious retreats for fishermen in rainy weather; others are under the level of the lowest tides; consequently, there is a continual flux and reflux of water, occasioned by the swell of the sea, which in the course of time has penetrated very far into the base of the island.

It would be impossible to explore these cavernous holes, because the swell rises, at every ingress, to the top of the entrance; which of course excludes all external air; and the internal air being powerfully compressed by the rushing in of the water, produces, by its re-action, a very singular effect. On the perpendicular cliff, forming the coast opposite to Egg Island, there are two or three very curious *jets d'eau*. By the compression of air within the caverns, where they are probably more enlarged than at the exterior openings, it appears that the waters must have gradually perforated amongst the cracks and fissures, vertical, or more probably, oblique, and irregular passages within, and behind, the exterior rocks. The orifices of those passages appear on the face of the cliff at the height of 60 or 70 feet above the sea; from which I observed the water to spout, exactly like the blowing of a whale, and, at intervals, corresponding with the times of the rise and fall of the swell.

On the northern coast, at Munden's cove, and also to the eastward of Rupert's Valley, at a considerable height above the sea,

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is found a sort of saponaceous argil, which is used by the soldiers as a substitute for soap in washing. It is secreted in either small elliptical cavities, or partly occupies longitudinal vacancies in the rock. Formed into a lump, I have used it as as a wash-ball, by way of experiment: it lathered in a small degree like soap; but left a prickling sensation on my hands, something resembling that which is occasioned by soap when overcharged with alkali: it dissolves entirely in water, and forms a smooth liquid mass, without the smallest grit, of the consistence of cream, of a reddish colour; and when left to dry, it cracked; but still retained a sort of unctuous quality. Of this production there has been as yet no analysis. I am therefore not informed whether it possess the same properties of steatites, which, according to the analysis of Bergman, contain in 100 parts, 80 of silex, 17 of mild magnesia, 2 of argillaceous earth, and nearly 1 of iron, in a semi-oxydated state.

Various coloured earths or clays abound in many parts of St. Helena. Upon the hills towards the sea they are discovered, only here and there, in thin veins, bedded between layers of rock. In the interior, particularly about a mile to the eastward of Long Wood House, the deep and sloping sides of some of the ravines, which are of great extent, are clothed with a variety of beautiful tints of white, blue, grey, and red. Of the brilliance of these earths, when the sun shines upon them, no words, nor even the finest touches of the pencil, could convey an adequate idea.

Whether those colours penetrate to any great depth within the surface, appears to me doubtful; because, in digging the ditches for the new fences at Long Wood, at a short distance from the ravines, we rarely found any sort of coloured earth; and this was generally of a reddish tint. We know, that by frequently stirring

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and exposing common earth to the influence of the air and atmosphere, that a pale brown soil is changed to a much darker hue. We observe, that as flowers gradually open, and are exposed to the air, they throw off their old colour, and acquire a new one; but, whether certain component parts of earth or clay, are capable of being changed into any other colours than dark brown, or black, by a long exposure to the sun, air and moisture, I shall leave to the decision of those who are skilled in the sciences of natural philosophy and chemistry.*

I have now endeavoured to explain the most striking facts, connected with the Geology and Mineralogy of St. Helena, which have come under my personal inspection. Having done so, I must here claim the indulgence of the reader, not only on account of the preceding observations having been made in a casual manner, but because they relate to sciences of which I do not profess to have any skill or knowledge. I should indeed have contented myself with barely stating facts, and have left it to more able hands to form conclusions: but in adhering to this mode, I was fearful I should have rendered the subject less intelligible. It is for this reason I have been induced, occasionally, to draw conclusions, or to offer conjectures: but as these are given at all times with diffidence, I beg they may be received merely as suggestions; in which shape they may be of use to those who

* Cronstedt is of opinion "that common clay, especially the *blue*, *grey*, and *red* "kinds, may derive their origin from mud; and as the mud proceeds from vegetables, it "will thence follow, that the varieties of clay just mentioned, are nothing else but the "common mould altered, after a length of time, by means of water."

Some of the white clays of St. Helena appear to be a species of *lithomarga*, or stone-marrow, being as fat and slippery as soap. Possibly the white are the primitive clays of the eastern part of the island, which have, in the course of ages, been changed into a variety of colours by some unsearchable cause in nature.

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may hereafter be disposed to contemplate the physical circumstances of this extraordinary place.

Although I am apprehensive, it may be considered that the preceding remarks are already extended to too great a length, yet there is a subject adverted to in the early records of the island, which appears to deserve particular notice; not only, as being connected with the mineralogy of the island, but as it may hereafter, if more fully investigated, lead to the most important results.

In a letter from the Governor and Council to the Honourable the Court of Directors, dated the 1st of December, 1715, it is stated that two Spanish gentlemen, one a priest, the other an engineer, had arrived at the island. These persons having resided a considerable time at Mexico and Peru, professed to have a perfect knowledge of those appearances which are the sure indications of the existence of rich mines. After having examined some parts of the island, they declared their opinion that, "there "are certainly some rich mines of metal here." The Governor, hearing of their conjectures, sent for them, and shewed them several places, where "*there is a stoney soil that looks like ore*," and they assured him *that these are the signals of rich mines of metal*: one of them indeed asserted his opinion, that what he saw "*was the signal of a gold mine.*" *

It would seem, that those Spaniards resided several months on the island, and that Mons. Oliviero was principally consulted; for, by a second letter on this subject, we find that Governor Pyke, who appears to have been a man of excellent understanding,

* "The Governor sent for them and shewed them several parts of the island where "we have a stony soil that looks like ore; and they have assured us that these are the "signals of rich mines of metal; and, that one of them they take to be the signal of a "gold mine." Official Letter, 1st December, 1715.

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was still employed in his researches, with a view to the discovery of this precious metal. He does not seem to abandon the idea after five months perseverance; but he complains that a want of labour prevented him from penetrating to a sufficient depth. The last record of this expected gold mine is in an official letter, addressed to the Court of Directors, dated the 15th June, 1716, in the following words:

"The Governor has employed most of his time, since the "arrival of the Heathcote here, with Monsieur Oliviero, a "Spaniard, who has dwelt a considerable time both in Mexico "and Peru, among the Spanish mines, and has set some of your "Honour's slaves to work at digging on the N. E. part of this "island, near a place called the Turk's Cap; where we have "found a sort of mineral earth, that the same Spaniard tells us "is a sure signal of a mine of metal. We have sent home musters "of it by the ship Heathcote, and are assured by the same Mon-"sieur Oliviero, that as we go deeper, we shall find clearer and "more evident proofs of metal; these being none other than "signals of ore, which, he says, all who understand mining, will "affirm as well as himself. We wish we had hands to spare, "that we might keep some employed in digging on this occasion, "because we desire nothing more than to make the island yield "to your Honours some reasonable recompense for the great "expense and trouble you have been at to improve this (hitherto) "unprofitable place."

My attention was naturally attracted by those passages in the records, to the place pointed out by Governor Pyke. I therefore employed three men, under the direction of Captain Henry Pritchard, a very intelligent officer, to examine the hills in the vicinity of Turk's Cap Bay; and to dig in those places that appeared the most likely to be productive of ore. No certain

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indications of gold have hitherto been discovered; but, as Captain Pritchard mentions the "appearances of a silver ore "found in a soft yellow stone;" and as the whole of his observations are interesting, and may be of use hereafter, I will here record them in his own words.

1810, *September* 11. "I have this moment returned from "Turk's Cap Valley, in which I observe abundance of calcare- "ous spar, and various stones of extreme hardness. Being fully "satisfied with our first attempt to explore this valley, I have "every reason to believe that we shall soon come to ore of per- "haps the most valuable description. *September* 21. I have "sanguine hopes of the productions of Turk's Cap Valley; "having, since my last communication on this subject, collected "some valuable information. Mr. Thomson, who has a consi- "derable knowledge in mineralogy, has promised to assist in "analysing whatever we may find: he is decidedly of opinion, "from the specimens I have shewn him, that we shall find metal, "of various kinds, in Turk's Cap Valley.

September 27. "We have not proceeded so fast as could be "wished, by reason a large flake of blue-stone presenting itself, "which we have partly removed. There is a yellow earth, which "I washed, but found nothing deserving remark; although its "appearance (according to what I read in Chambers' Diction- "ary) is very favourable. I send a piece of opake agate, in which "gold is found in South America. I hope for a true copy of "that original from the pit that is now opened.

October 21. "I send a collection of stones found at the depth "of 26 feet in our present pit. They are certainly valuable in "themselves; and more so in the indications they offer of ap- "proaching mineral earth. The dust in which they are found "(for they are all separate as you see them) contains particles of

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" shining metal, extremely minute. This is, I presume, suffi-
" cient to encourage perseverance.

" I would propose, after having penetrated to the depth of 50
" or 60 feet, and after carefully examining every strata of earth,
" &c. to commence cutting directly down the ravine, (as our pit
" is on the top of a hill 250 feet high),* by which means we
" shall be able to explore with great exactness the properties of
" the interior. This, and a scrupulous examination of the matter
" that may be found, would consume several weeks: but such
" an examination cannot be accomplished in any other way."

3d *November*, 1810.—Accompanying this I send specimens of
" stones found at 27 feet deep. Most of them have veins of ore
" running horizontally; and at this depth the vein of stone has
" changed to the red sort. It is capable of a very high polish.
" The earth with which they are incrusted is soft and yellow;
" but I do not perceive any indications of metal; although they
" still correspond with some memoranda I have in my possession.
" I therefore trust we may soon be satisfied as to the existence
" of valuable ore in this spot."

16th *November*, 1810.—" By the accompanying specimens,
" you will readily perceive I have been very successful in making
" the experiments you desired. I send the calcareous spar of
" Turk's Cap Valley in three different stages: the first is in
" powder, and dry; the second, slaked; and the third, mixed
" with water to the consistency of common mortar: when dried,
" it is susceptible of the highest polish.

" The last specimen of ore that I got from the pit is by far the
" most promising; for upon bruising a soft yellow stone, the
" whole of the veins produced an ore of a silver appearance. I

* It is probable that these researches might have been more successful, if the pit, or shaft, had commenced at the foot of the hill, instead of the summit.

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" am very certain, that if a proper process were adopted, it would " afford a satisfactory result—that ore is contained in the pit we " are now employed at."

20th *November*, 1810. " Some of the accompanying stones " are the most curious we have yet arrived at in digging the pit: " they afford strong indications of metal." *

" I have also sent some of the plaster of Paris which is found " near Prosperous Bay. Of this a large quantity might easily be " procured, as it is dug up from the rocks, not more than a foot " from the surface. It is very easily reduced to a powder, and " makes a beautiful shining white, when properly laid on as a " wash, and a still more beautiful plaster."†

These minutiæ relative to this spot, which is so very singular in its productions, and so widely different from every other part of the island, cannot fail, I should hope, to be acceptable to the mineralogist. He may possibly discover among them some traits by which he may judge of the probability of success in obtaining a valuable ore, by further perseverance; at all events, Captain Pritchard's observations are calculated to render more complete the attempt I have undertaken to explain, in as concise a manner as the subject would admit, the natural productions and the most striking features of this island.

I am not aware of having omitted any important fact connected with the geology or mineralogy of the island; but, if more particular information should be desired by those who take delight in philosophic investigations, I beg to recommend to their

* In one of these stones I observed a small piece of metal, which had the appearance of silver or tin; many of them had a metallic tint, probably what the two Spaniards termed " *the spume of metal, or the mineral fumes condensed in the upper crust.*"

† Specimens of calcareous spar, plaister of Paris, &c. were sent to the Court of Directors in December 1810.

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perusal an analytical description of St. Helena, which was published, by an anonymous writer, about ten years ago.

The soil of this island is uncommonly fertile: producing, without manure, a succession of crops of potatoes, at the rate of more than two in the year for twelve or fourteen years together. It varies, in all the shades of colour, from a black mould to a pale brown. The former is the most productive, abounding more with mould and clay. The latter yields also exceeding fine crops of every kind of European esculent and corn. Even the driest and most barren looking spots of the paler sort, have been found to be well adapted to the growth of pineaster trees. Some of the blackest soil is similar to that which is usually appropriated to the culture of cotton in India. It dissolves entirely in water; cracks and blisters when dried by the sun-heat; and is easily melted (if I may use the expression) and carried off with the gentlest currents during the rainy seasons. This species of soil is, however, very rare; the others are more predominant, and are not disturbed by the heaviest rains.

No analysis has been made of those soils: but so far as I could observe they are wholly destitute of sand. This circumstance, together with a want of tenacity in the clays, I take to be the causes that all attempts to manufacture bricks, or pottery, have completely failed.

The climate of St. Helena is perhaps the mildest and the most salubrious in the world; and is remarkably congenial to the human feelings. Neither too hot nor cold, it preserves throughout the year that medium temperature which is always agreeable. This temperature, however, varies considerably according to the elevation of the land. At Plantation-house, the range of the thermometer during the year, when kept in the same place, was only from 61° to 73°. At Long Wood, although at the same height above the sea, it was generally 5° lower: proceeding no

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doubt from the situation being more exposed to the south-east trade wind. In James's Town it is generally 5° to 7° higher than at Plantation-house.

These are the temperatures within doors. In the open air at Plantation-house the thermometer sometimes falls to 52°, which happens between June and September; and in this winter season (if it may be so called) the inhabitants living in the country find it necessary, or at least comfortable, to make use of fires in their rooms. Thus, it will be perceived, there is a diversity of climate; so that a person residing in James's Town, in the warm season, may pass, within the short space of an hour, from the medium temperature of India, to that of the spring or summer months in England. This has been found beneficial to valetudinarians from India, who occasionally resort to the island: some of whom have been restored to perfect health, after a few months residence in this salubrious climate.

The late Governor Brooke assured me, that during the period of his government, a gentleman arrived from England who had been long suffering under a pulmonic consumption. He seemed to be in what is generally termed the last stage of that disorder (this to medical men may appear doubtful): he was extremely reduced, and apparently beyond recovery. After residing only three months, he was completely restored, returned to his native country, and continued in the enjoyment of health for many years afterwards.

In the XIVth Section of the first part of this work, I have treated, at considerable length, upon the rainy seasons. It will be sufficient, therefore, in this place to remark, that during the year there are two seasons of rain. The summer rains are usually expected in January or February; and the winter rains in July or August. The periods of their continuance are generally from six weeks to two months: but neither their setting in, nor dura-

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tion, is by any means regular. The quantity of rain which falls during the year varies considerably. In what are called favourable years, the total quantity may be from 25 to 30 inches: and sometimes more. Even in an unfavourable year, 1811, I found the fall of rain was 22.4 inches: which is rather more than the average in London.

From the 22d February, 1811, when the summer rains began, until the day of my departure from the island, on the 1st September 1813, I kept an exact diary of the fall of rain; which was continued by Mr. Jennings, the Company's gardener, to 1815. The rain was measured in an accurate rain-gauge, sent from England, by Sir Joseph Banks: the following were the results:

1811 - -	22.40 inches
1812 - - -	29.04
1813 - -	32.13
1814 - - -	49.96*

* *Abstract of the Monthly fall of Rain, at Plantation House, during the years* 1812, 1813, 1814, *and part of* 1815.

MONTHS.	1812.	1813.	1814.	1815.
	Fall of Rain.	Fall of Rain.	Fall of Rain.	Fall of Rain.
	Inches.	Inches.	Inches.	Inches.
January	0.80	3.0	2.54	0.78
February	2.90	2.54	5.92	3.10
March	7.31	1.54	6.70	2.78
April	2.23	2.01	7.35	not ascertained.
May	0.57	9.84	7.49	ditto
June	4.06	3.65	4.37	ditto
July	3.45	2.23	3.19	ditto
August	1.76	1.62	4.40	ditto
September	2.02	2.79	2.76	ditto
October	1.08	0.66	2.44	ditto
November	0.62	1.81	0.78	ditto
December	2.24	0.44	2.02	ditto
Total	29.04	32.13	49.96	

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Hence it appears, that St. Helena, during these last three years, had its full share of rain, and in much greater quantity than usually falls in London: which, by an average of eleven years, is no more than 21.25 inches: whereas the average of four years, at St. Helena, was 33.38 inches.

Cloudy days exceed in number, about two to one, those on which the rays of the sun fall upon the earth without interruption; and the number of days on which rain falls, during the year, is about 135. The wettest months are said to be January, February, and March, and June and July. This observation may be correct, although it does not accord with the preceding Abstract. The favourable or unfavourable seasons depend on the number of days of heavy rains, and fine showers. Some idea may be formed of the variations in different years by the following comparison:

In 1806	heavy rains and fine showers,	92 days
1807	- - - -	79
1808	- - - -	58
1809	- - -	71
1810	- - - - -	78
1811	- - -	60

From thunder and lightning this climate may be said to be wholly exempted. In the course of 60 years, only two flashes of lightning are recollected; and these, I believe, were unaccompanied with thunder: neither is it subject to those storms and hurricanes, which occasionally afflict and desolate many other tropical islands. The trade winds generally blow with uniform steadiness; very seldom increasing beyond what is called a fresh breeze.

There are many copious springs of pure and wholesome water. These generally issue from the highest lands. The quantity

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usually discharged at James's Town, was found to be six hogsheads in a minute, or 2160 tons in the 24 hours, after the absence of rain. Comparing the size of this stream with the others on the island, I compute that not less than 10,000 tons of water are daily discharged from the springs into the sea in dry weather. Scarcely any use has hitherto been made of this water except for the supply of the inhabitants and their cattle, and for watering a few small yam plantations and gardens. Where experiments have been tried of irrigating the grass lands, even upon what were originally as barren and forbidding as any part of the island, they have been with a success which has astonished those who made them. Mr. Dunn's improvements, at the Briars, a beautiful and romantic spot near the waterfall, have most clearly demonstrated the extremely beneficial effects that might be derived from a skilful direction and use of the waters with which nature has so bountifully supplied the island. His meadows, though small, vie with the best in England. His garden produces excellent grapes, peaches, apples, guavas, oranges, plantains, and other fruits; and all sorts of esculent vegetables. This small example is sufficient to prove the capability of this fine island; which is further exemplified by the gardens of Miss Mason, and Mr. John Mason, situated near the eastern side. Miss Mason's orchard is, for its extent, the finest and most productive I ever beheld: the apples are of a high flavour; some of them have measured sixteen inches in circumference.

It appears, however, by the records of the Government, that this island has been occasionally visited by severe droughts: a visitation perhaps not less frequent in other countries. Great losses of cattle have also been sustained; but I am thoroughly convinced, that those losses might have been alleviated, if not

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entirely prevented, by the introduction of green fodder crops,* and a proper system of husbandry. This subject has been fully discussed and illustrated in several papers contained in the First Part of this Work. By these it will be seen, that the farmers of St. Helena have always depended solely on their pasture lands for the subsistence of their live stock: this was the real cause of their heavy losses: but before I quitted the Government, I had the gratification to observe, that they began to be sensible of the advantages of the system of husbandry which I had been at so much pains to inculcate. I earnestly hope, they may henceforward have every possible encouragement to persevere in their laudable beginnings; for this would not only be the most effectual means of averting the calamities incidental to seasons of drought, but would also promote the general interests of the island, by making it abound with almost every necessary of life; and consequently it would become more useful and valuable for the purpose of refreshing fleets.

Doctor Roxburgh's Account of the Indigenous and Exotic Plants, which is given in the Appendix, would have left me nothing to add upon this subject, were it not that several of the vegetable productions appear to deserve more particular notice,

* This opinion is fully corroborated by Governor Wilks's Agricultural Report, dated 10th of March, 1815.

"Although," says he, "the calculation of profit on an acre of potatoes may be greater "than that on an acre of corn, it is a sufficient illustration *of the necessity of corn crops* "to any safe system of husbandry in this island, that as far as speculative opinion may "warrant a conclusion, the Company's stock of cattle would, in the event of a severe "drought, be preserved, while those of most of the other landholders would perish."

The younger Mr. Breame, of Norfolk, lately returned to England, after four years experience at the Company's farms, assures me, that he has found, after a corn crop has fairly covered the soil, it is out of all danger, because the dews and drizzling rain are sufficient to bring it to maturity.

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on account of their value in some of our British manufactures. The *salsola*, a maritime plant, which yields barilla, is very abundant. It grows spontaneously on all the exterior parts of the island, and to the distance of more than a mile from the sea. Different species of *lichens* are found on the rocks and gum-wood trees; amongst which, it has been ascertained, is the true Orchel, so valuable in dying. The *palma christi*, yielding a fine castor oil, intrudes itself every where, and grows in vast quantities:—and the *capsicum*, which produces red pepper, of the first quality, might be cultivated with advantage to any extent. Considering it probable, that these productions may, at some future period, attract more notice than they have hitherto done, and become valuable exports; I shall therefore offer a few observations on each.

The *salsola* appears first to have been observed by Governor Brooke, in 1789; at whose request it was examined by the Honourable William Petrie, at present Governor of Prince of Wales's Island. He describes it, in a letter to the Governor, in the following words:

"I have the honour to inform you, that I have examined, by "every experiment which the shortness of my stay at this place "would admit, the maritime plant which grows spontaneously "in great abundance upon this island; and on which you "desired my opinion with respect to the nature of the salt it "contains.

"I cannot hesitate to assure you, from every trial I have made, "that this plant is of the kali species, *Salsola soda* of Linnæus, "and yields upon incineration, a very great quantity of the fossil "alkali: and that the only doubt I entertained at first, of the "species of this salt, arose from the acid, not having been pro-"perly converted, or expelled, on the incineration of the plant:

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" which unavoidably gave equivocal results on the first trials of " this alkaline salt.

" It would be superfluous to enumerate the advantages to our " commerce from the collection of such considerable quantities of " this salt, as may with great facility be made upon this island, " as they must be self-evident to every one who is acquainted with " the great consumption of this article in some of our most useful " manufactures in England; and with the considerable amount " which is paid to foreign nations for the importation of the " mineral alkali.

" It makes a finer and harder soap than the vegetable alkali; " some of our first chemists have preferred it to the other fixed " alkali in the manufacturing of glass; and it is, I believe, " adopted, as a very useful article in the Materia Medica. At " present, our markets, I understand, are supplied with this useful " salt from Montpelier, where a very impure soda is prepared " from the kali; and with a purer kind from Alicant, and per- " haps from other situations upon the Mediterranean coasts.

" I have received the specimens of the plant, salt, &c. which " you have sent me: and I will take an early opportunity, after " my arrival in England, of submitting the salt to further che- " mical tests, the results of which, together with every other " information on the subject, I will with much pleasure com- " municate to the Honourable the Court of Directors, agreeable " to your desires."

Soon after my arrival, I gave my attention to this valuable but neglected plant: and several experiments were undertaken with a view of ascertaining the best mode of burning, and the expense of manufacturing it into barilla. In the early stages of those experiments, some samples had been forwarded to England: but as they were from old plants injudiciously burnt, the barilla

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was very inferior to that produced afterwards. Of the improved samples some were also forwarded to the Court of Directors, in June 1810, accompanied with the following official report:

"A box containing samples of the second crop of St. Helena kelp, is forwarded by the present fleet. They seem to be very superior in quality to any hitherto sent to England; and as the persons employed are become more expert in burning, it would be very desirable to have a separate analysis of these samples: for I have many reasons for believing that this export might be carried on to a large extent; and that it might ultimately be productive of considerable benefit to this island.

The success which attended the new mode of burning, and the very small expense at which the barilla may be manufactured, will appear by what Captain Pritchard says on these subjects."

"*5th July*, 1809.

"On the 30th ultimo I commenced burning the second crop of the salsola in James's Valley. I had only four labourers; and on the 4th instant, that is, in five days, the vitrified cakes produced from one pit were taken out, and weighed 10cwt. 1qr. Its quality appears excellent, and is certainly far superior to our former specimens. The expense of collecting and burning this quantity is exactly 25 shillings, or at the rate of 50 shillings a ton.

The salsola which was cut down at Sandy Bay between the 3d and 9th of April, had again grown to its original size, and fullness, by the 15th of June; that is, in 72 days, a vegetation

* Garrison soldiers are usually employed on the public works at one shilling per day *extra*; which is an advantage to the Company, and adds to the comfort of the soldier:—for since the prohibition of spirits, this indulgence cannot be abused. If the Chinese, or other labourers, were employed in the manufacture of barilla, it would cost from *L*5..10*s*. to *L*8. per ton.

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which is scarcely surpassed in any other vegetable production. In all the ravines of the island during the months of rain, the growth has been in proportion. It may therefore be inferred that two crops a year might be produced from all those parts of the island where it grows. These observations will tend to shew the large quantities that might be manufactured if we had sufficient labour for that purpose."

From Captain Pritchard's remarks, it appears that the expense of manufacturing, when soldiers are employed, is about 50 shillings a ton; and if 10 shillings be added for contingent charges of carriage, cooperage, &c. the whole may be reckoned at £3. The best Carthagena barilla has been sold at £56. a ton. If St. Helena barilla should prove of the value of only £50. the profit to the Honourable East India Company, if their soldiers were employed in manufacturing it, would be very great: consequently, this is an export particularly deserving their attention.

My own observations upon the surprising growth from the old stems and roots in various places, twelve months after the first cutting, fully confirm the opinion given by Captain Pritchard. The experiments made at that time in raising the salsola from the seed are also very satisfactory, since they decidedly prove the possibility of extending the number of plants; and that by aiding nature, and attending a little to the culture of the plant, which might be done at a very trifling expense, the produce from this island, in the course of a few years, might be immense.

I found some difficulty in ascertaining the period at which the seed is in a perfect state of ripeness. This, however, might very easily be determined, by gathering a few plants, at intervals of three weeks from the time the blossom shews itself, until the plant has changed its colour, from a pea-green to a yellowish tint. The best season for cutting the salsola is in May, June,

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and July, when the leaves are full of sap, and are therefore, I should imagine, more productive of the alkali than when they begin to fade and shrink.*

Being desirous of knowing how much alkaline salt was produced from a given quantity of the salsola, and the comparative produce of alkali from furze and blackberry bushes, Doctor Kay, the medical superintendant, obligingly undertook the experiments, and reported as follows:

"From a trial I made, to find how much salt a given quantity of the plant supposed to be the salsola would produce by incineration, and also to ascertain the comparative quantity to be obtained from the stems and leaves separately, the results were as follow:

No. 1. Thirty-eight pounds of the plant burnt entire (under cover) yielded of dry marine alkali, or impure soda - - - - - - -	oz. 19
No. 2. Eighteen pounds of the stems entirely divested of leaves, yielded of the same salt, -	drachms. 10
No. 3. Thirty-one pounds of leaves adhering to the small extreme branches, yielded - - -	oz. $16\frac{3}{4}$

Three pounds of the large stems were burnt with the leaves in order to begin and support the ignition; but according to No. 2, the salt from these stems would only be 1 drachm and 2 scruples, so that the salt from the leaves was $16\frac{1}{2}$ ounces and 1 scruple. Therefore, 100 pounds of leaves will produce upon an average 3 pounds $5\frac{1}{4}$ ounces of salt nearly. And the entire plant, by trial No. 1, will produce only 3 pounds 2 ounces. But, a day or two after the lixivium No. 1. had been evaporated, I found as much remaining in the cask from which it had been drawn as

* The leaves of the *salsola* are small; linear; short ($\frac{1}{4}$ inch); rounded, and fleshy: although full of sap, the plant burns fiercely without being dried. (See Appendix—*Salsola salsa*.)

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would probably have yielded one ounce of salt more; in this case, supposing the 38 pounds had yielded 20 ounces, the entire plant will give nearly three pounds four ounces and a quarter from 100 pounds original weight; but the value of this additional ounce from each hundred pounds, would be more than counterbalanced by the time employed in stripping the leaves, and their much slower combustion than when the plant is burnt entire, as cut or pulled from the ground. The ashes from No. 1 (per steelyard) weighed four pounds: those from No. 3, three pounds and three-quarters.

As you wished to ascertain the comparative quantity of salt to be procured from furze, and the bramble or blackberry, I made the following trials.

	Oz.	Scrup.
No. 4. Seventy pounds of furze yielded of impure vegetable alkali somewhat deliquescent -	$\frac{3}{4}$	2
No. 5. Seventy pounds of the blackberry-bush yielded of the same sort of salt - -	$5\frac{3}{4}$	0

The bushes were cut down from nearly contiguous thickets and burnt on the spot, and the ashes afterwards removed under cover. I think they would have yielded more salt had they been burnt in a grate under shelter, because some of the ashes were scattered by occasional puffs of wind; but these had an equal effect on both piles. The ashes from No. 5 weighed (per steelyard) one pound and three-quarters. The weight of those from No. 4 I could not determine, as there was some earth intermixed with them. There are two species of blackberry here; that used was the smaller sort, with green stems and paler leaves."

Doctor Kay's experiments having been conducted in the same manner throughout, are so far valuable, that they shew with minute accuracy the respective proportions of alkali produced from

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the ashes of the several parts of the salsola plant, and a just comparison also with those from the furze and blackberry-bushes. But, as the very limited scale of these experiments did not admit of sufficient heat to vitrify the ashes into a cake, it seems probable that the results of the salsola would have been materially different, and perhaps more favourable, if the experiments had been made upon a larger quantity of the plant. I say more favourable, because I observed that those who have had considerable practice in burning, considered the loose ashes of very little value compared with those formed into cakes.

The very high commendations which have been bestowed on the St. Helena barilla (particularly upon the improved specimens), by persons who have a practical knowledge of its manufacture, have induced me not to withhold some further information in my possession, relative to the mode of burning; the rapid re-production of the plant, and the practicability of extending its culture throughout many parts of the island which are wholly unfit for any other purpose.

Although the salsola be a marine plant, and grows spontaneously on the most barren places, where neither corn, nor esculents, nor trees, will grow; yet it is of that nature, that it grows with great exuberance in the gardens and fields in the interior of the island. This I determined by several experiments, of which it will suffice to give the detail of one at Plantation-house.

Some of the seed, which is black and extremely small, taken from plants on Ladder Hill, were sown on the 7th February, 1810, in a box filled with garden mould. The plants appeared on the 4th March. On the 2d May they were eight inches high. Soon after they grew so large in the box, that I determined to transplant them. Accordingly about a dozen were removed to the Plantation-house garden, where they continued to thrive;

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and on the 25th April, 1811, (that is, in fourteen months from the seed) each of the plants covered a space of about eight or nine feet in diameter. Hence it is clearly proved, that the salsola of St. Helena might be cultivated in fields, as in Spain. It seems, however, to be of a different sort. Some specimens of Alicant salsola, that were sent to me from England, were small twigs, about the size and appearance of lavender, and only twelve inches long: but at St. Helena, particularly in Rupert's and other vallies, or ravines, I have seen a single plant covering a space of fourteen or fifteen feet in diameter, rising to the height of six feet; and which was the growth of twelve months after cutting. How infinitely superior then would be the produce from the St. Helena sort! I am of opinion, from all I have observed, that in raising this species from the seed, the plants should be permitted to grow at least eighteen months before the first crop is taken. Then, I conceive, they would attain sufficient strength for re-production; and afterwards would yield one or two crops a year, *ad infinitum*, in the same manner as those plants (particularly in the low and sheltered places) growing in their natural state.

I cannot better illustrate what has been said on this subject, than by extracting from Captain Pritchard's official reports the observations he made at the time he was employed in directing and superintending the manufacture.

"The alkali at Sandy Bay being very superior to any yet produced, and the new mode of burning being quite different from what was first tried, I shall here detail the process by which we have arrived at perfection.

When the plant was put in a pit, according to Chaptal's directions, it was found to produce nothing but charcoal and ashes. But, by raising circular kilns on the surface of the ground with loose stones, so as to admit air on all sides, and making the

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kilns only two and a half feet diameter, and four feet high, the fires burn fiercely, and the whole of the ashes, in four days, were formed into solid pieces, as hard as stone.

To ascertain the difference between this and our first mode of burning, I dug a pit, three feet in diameter, and four feet deep. It was supplied with the plant in the same manner as the loose stone kiln. It had been burning nine days when I yesterday saw it; and then there was not a lump which would weigh two pounds in all its contents, This failure appears to proceed from the total exclusion of air.

I sent the overseer to Thompson's Valley, that he might report his opinion upon the plant there, which is as follows. There is a great quantity, and it is very tall, but he supposes it will not yield much good alkali, from the quantity of stem (or stalks) with which it abounds; however, I am inclined to think that this must solely arise from its age. If it were cropped, or headed down, I have no doubt it would afterwards produce *abundantly*: therefore, should it meet your pleasure, the party there may continue to collect and burn, and from the first samples a judgment may be formed. It seems to me, that Sandy Bay will produce the greatest quantities, and the best." *25th June*, 1809.

"I send you the produce of *one ounce* of barilla, a part of that piece you saw at the Castle last Monday. I prevailed on Mr. Thompson to lixiviate and evaporate this small quantity. He says, that the alkaline salt is the finest and best he ever saw in all his travels. His early pursuits in life having given him a practical knowledge of these matters, his opinion may be the more relied on." *8th July*, 1809.

"The barilla burning at Sandy Bay goes on very well, and the alkali is exceedingly good. I was astonished to see that those plants which were cut down only three months ago, have again

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sprung up. I send a specimen of one of medium growth, which is higher than any we have seen in any other place. I send also a specimen of another kind of salsola, which is of smaller size than we have hitherto burned. It is not so abundant as the common sort; but I am convinced it would yield alkali in a greater proportion." *23d August*, 1809.

"The salsola grows very luxuriantly in Friar's Valley, by reason of the saline water with which this valley abounds. This is peculiarly deserving attention; for these waters are nearly as salt as sea-water. I am persuaded from what I observed in my way to Thompson's Valley, that the salsola thrives better, and grows to a larger size when watered with *salt*, than with *fresh* water. I observed also, among some salsola plants which are growing within five yards of the surf, that there are icicles of salt (if I may be allowed the expression) intermixed with the bushes; some of which are from one to two feet in length, and as clear as crystal. I should have sent you one of them, but it was impossible to reach the spot from which they impend." *31st August*, 1809.

"Friar's Valley has produced the largest piece of barilla we have yet made. The overseer says it would have weighed nearly 1000 pounds before it was broken into pieces in the pit. I am perfectly sure that this is the most fit ravine to collect and cultivate the salsola." *27th September*, 1809.

"I yesterday inspected the growth of salsola in Friar's Valley, and I was astonished to find that it is already fit to cut. This I attribute to the many salt springs with which that ravine abounds. I reported on a former occasion my opinion regarding the culture of salsola in this ravine; and I can now assure you with more certainty, that this place is one of the fittest on the island for that purpose; for, according to my memoranda, it has yielded

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(comparatively with its size) twice as much as any of the other ravines, and of a very superior quality. It was from this ravine that we produced the purest soda, and the Prussian blue,* samples of which you some time ago sent to England." *21st January*, 1810.

"It is with much pleasure I inform you of the success in salsola burning. There are now 25 casks of about 400 weight each; and I calculate upon three times that number being ready by the departure of the first fleet. It is all of the very best quality; which I think will be proved by an analysis of the specimens of soda that have been already sent to England. Evidently the plant improves by cutting; which is all that is necessary to be known, in order to be satisfied that it may prove a very valuable and permanent export." *21st August*, 1810.

"The overseer will have finished burning barilla in Rupert's Valley this week, from which place one ton and 1200 weight has been produced, for the trifling cost of about £6. The burners will quit this valley on Saturday, and should you approve of it, will go to Friar's, where the salsola is now in high perfection. I expect by the end of the year to have an hundred casks of barilla ready for exportation, containing, upon an average, 400 pounds each, and that of the best quality." *21st September*, 1810.

Mr. Thomas O'Connor, a respectable merchant at St. Helena, who had for several years burnt salsola for his soap manufactory, undertook to direct and superintend the burning in James's Valley. The samples produced were, in appearance, equal to the best Spanish sorts we had received from England. He used no pits; but kindled his fires on the surface of the ground, feeding and stirring them, and taking care that the plant was

* Some beautiful specimens of Prussian blue were made at St. Helena, and sent to England. It might be manufactured in large quantities, and at a moderate price.

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entirely consumed before he added fresh fuel. From his statement of the expense of collecting and burning, it appears that 20 days labour, (averaging only seven hours per day), produced 690 pounds of well vitrified ashes; this is 34½ pounds from seven hours labour of one man. At this rate 100 men employed during 300 days in the year (which would be 30,000 days labour) might manufacture 462 tons. But if we take the quantity at only 400 tons, and suppose it would sell in England at £50. per ton, the value would be £20,000.

The charges of making would be nearly as follows.

100 Chinese labourers rated at £30. per annum, which rather exceeds their annual expense at St. Helena (see page 186) - - - -	£ 3,000
Freight to England, at £5. per ton - -	2,000
2400 old beef casks for packing - - -	2,400
Contingent charges of cooperage, carriage to wharf, &c.	50
	7,450
Estimated value - - - -	20,000
Leaving a profit of - - -	12,550

It is impossible to form an estimate of the quantity that might be manufactured at this place. The salsola plants in their natural state are scattered over the exterior of the island, from the margin of the coast to the distance of more than a mile from the sea. Upon Ladder Hill, and Rupert's Hill, New Ground, and many other elevated spots, as well as in the ravines, they are generally detached shrubs, two or three feet high, and covering a space of from four to eight or nine feet in diameter. Some are much larger: but to the eastward of Long Wood there seems to be a different species, growing like a creeper, the plants uniting,

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and forming a matted texture over the soil, which at a distance resembles a fine rich meadow.

But whatever may be the quantity of salsola plants at present, I have no doubt it might be greatly increased, and at a trifling expense, in the following manner.

Having succeeded in raising plants from the seed in Plantation-house garden, and upon some barren spots on which the salsola was growing spontaneously, there can be no doubt of the possibility of extending the culture. It seems to me, that the least expensive mode would be, to loosen the soil in the intervals among the natural plants intended to be cut; to postpone cutting until the seed is perfectly ripe; and, after cutting, to spread the plants upon the loosened soil, and beat them a little before they are carried to the fire. I conceive, that by these simple means, the seed would be sufficiently deposited for the purpose of vegetation. If, however, an entire new plantation is to be made, I would recommend that the surface soil should be previously loosened by a rake or harrow, and the seed very thinly sown, and then bush-harrowed with the salsola itself. If the sowing were to take place just before the rains are expected, the new Plantation would thrive exceedingly; and if permitted to remain, as already mentioned, for eighteen months before the first crop is taken, it would yield one or two crops a year. New plantations might also be formed from seed beds; as the young plants have been found to thrive well after transplanting.

I have dwelt the longer upon this subject, because it holds out a fair prospect of obtaining some return for the heavy charges that are annually incurred by maintaining this small establishment.

Amongst the various lichens with which the island abounds, there is that valuable species called Orchel. The circumstances

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of its discovery, and the encouragement that was held out to collect it, and send it to England, are recorded in a letter from the Court of Directors, dated the 16th December, 1743, in these words.

" We are well satisfied, that our island abounds with archell, of which some sent us, is of the right sort, particular samples whereof came enclosed, as also of what grows in other parts. Mr. Goodwin has informed himself concerning this product as far as the short time would admit, therefore we must further refer you to him.

As this product is for dyeing, and will be of great benefit to our country, we are willing to give our inhabitants all encouragement for the gathering it.

The best sort of what our island produces, as by the samples sent us hitherto, if cleansed, gathered and picked, is worth £40. or £50. a ton, and as the freight home will be one-third of our freight from India, being about £10. a ton of 20cwt. net, we will therefore give to all such of our inhabitants as bring in any quantity not less than half a hundred, after the rate of 15 shillings a hundred, to be paid down by you as they bring it in.

But further to encourage them to gather large quantities, we will give leave to any of our inhabitants to ship it and send it home upon their own accounts on the following terms.

As it is the product of the island, which is our property, we will have 25 per cent. on the gross sale, in full of all charges for our indulgence, and £10. per ton freight, which we must pay the owner; there being no custom payable to the crown, the remainder will come to the proprietor, which we will take care shall be duly paid to his attorney.

You are to receive and pay for accordingly what they shall bring in to you, the parcels not being less than half a hundred,

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as before mentioned, and agree with the commanders to take it on board their respective ships, at one-third freight upon our account, and license all others to ship for their own account on the terms above-mentioned; you taking care to agree for the freight on the like terms, which we will answer and make good.

A sufficient quantity of spirits is delivered to Mr. Goodwin, to make the experiment, in order to know the true archell, who has also directions how to make use of the same."

It will no doubt appear surprising, after the knowledge of so valuable an article of commerce being a spontaneous production, that it should have, to this day, remained wholly unnoticed and disregarded. I cannot ascribe the supineness and negligence of the inhabitants to any other causes, than the scanty means of labour which they have always complained of, and to the terms proposed in 1743 not having been sufficiently encouraging to withdraw them from other pursuits, which yield, without much trouble, a certain and quick return. The sale of their farm produce to the shipping was a plain and uncomplicated concern: but to collect, and select the proper lichens at the very low price which was offered,* the payment of freight, and the subtraction of duty, together with the necessity of correspondence, and of agents in London, required a new sort of management, to which a St. Helena planter had never been accustomed.

Conceiving, however, that the increased value of this dye, of late years, and the augmentation of the labouring population, by the introduction of Chinese, may hereafter hold out stronger incitements to exertion, I resolved in the mean while, to use every means in my power, to obtain the fullest information concerning a natural production which may ultimately prove of considerable

* In 1743, it seems that Orchel sold in London for *L*50. or *L*60. a ton. In later times it has arisen to nearly four or five times that price.

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value to the Honourable East India Company. Captain John Barnes, the military surveyor, undertook to explore all those places where the lichens are to be found, and to collect specimens for the purpose of being sent to England. In his researches he discovered seven different sorts: upon which he made the following report.

"Having read that the Lichen rocella (which for the purposes of dyeing affords a very beautiful and valuable tincture called Archill) is imported into England, from the Canary and Cape de Verd Islands, and considering that St. Helena, from its similar situation, might also produce it, I have with the approbation of the Hon. the Governor, made a collection of lichens, &c. in the hope that amongst them it may be found; especially as it appears from the records of the island in the year 1743, that the true archill had been sent from hence to England, and was highly approved of. I cannot take upon me to assert that my search has been perfectly successful, but from every information I can obtain, I am induced to believe that it has not been entirely the contrary. I have not had time to make experiments on the lichens collected, nor indeed could I have satisfactorily depended upon the result of any, had they been made so as to have determined which was archill, carried on as they must necessarily have been with considerable difficulty, both for the want of proper apparatus, and scientific skill and experience on my part. It will afford me the highest possible satisfaction, if any of the present collection may prove at all conducive to the interests of the Honourable Company.

The package and box, No. 1, contains a lichen which is conceived to be a species of rocella: this conjecture is strengthened by the information of a gentleman, a native of this island, who points it out as the same sort which was approved of at home: it grows in abundance on the rocks near the sea, and especially at

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Gregory's, Hold-fast Tom, Prosperous Bay, and on the windward coast of the island, considerable quantities of it might be collected very readily and at a trifling expense.

No. 2. is a lichen which grows upon the gum-wood trees all over the island, but particularly on those in the Honourable Company's plantation at Long Wood, where it is abundant. From this lichen, it is presumed, a beautiful colour may be extracted; it might also be found valuable as a substitute for gum, if used according to the process in Lord Dundonald's patent. That nobleman's report states "that 1lb. of dry (prepared) lichen "will do as much work in calico printing as 1½lb. of gum "Senegal, and the difference of price makes a saving of £45. on "each table or press, in war time, and half that in peace." The lichens his Lordship specifies are "those which grow on trees "and shrubs." It may not be held unreasonable to suppose that the lichen of this number may possess superior mucilaginous qualities, growing on the bark of a tree which itself yields a very pure and excellent gum.

No. 3. is another lichen, found as No. 2.

No. 4. a whitish crustaceous lichen; found in abundance all over the island.

No. 5. is a box containing a specimen of a yellow lichen: this is found in many parts of the island, both in the interior and towards the sea; it grows on trees, rocks, and arid soils; it is not so plentiful as the other kinds.

No. 6. is a lichen growing on rocks, intermixed with No. 1. and is in great plenty.

No. 7. a small fibrous lichen; found generally, and in abundance on rocks, walls, &c.

There is no doubt but this island produces other, and perhaps infinitely more valuable lichens than any of those collected; specimens of which with all care shall be made.

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Should it appear to the Honourable Court of Directors as deserving their consideration to obtain from St. Helena the true Archill, and it be not found in any of the lichens already gathered, if an accurate description of it, with a specimen of the plant from Canary or the Cape de Verd, together with instructions and tests for experiments could be sent out, it might at once be determined whether it is to be found on this island.

I cannot offer any calculation of the quantity which may at present be procured of any of the lichens; certainly many tons of each, particularly of No. 1. and 2. No. 5. appears to be in the least abundance." *St. Helena, 10th July*, 1809.

Lieutenant Phillips, of the artillery, also procured five samples from the windward rocks of High Knoll.—"The whole," says he, "are so very brittle and dry, that in gathering and bringing "them, they were almost reduced to a powder, excepting one "sort, which grows in places more sheltered than the others." After minutely examining them, he inferred that sample No. 1. was in the first stage; No. 2. in the second; and No. 3. in the third; and that No. 4. and 5. were of two distinct sorts: consequently High Knoll appears to produce only three different species. They are all to be found in great abundance, excepting No. 2.

That sort which corresponded, as far as I could judge, with the description given of the true Archill moss, was reduced to a fine powder, and moistened with strong *lime water*, *urine*, and *alkaline salt*. It soon gave out a pale red: after remaining a few days it became of a deeper tint: and the liquid squeezed from those ingredients exactly resembled the finest coloured red wines.

This experiment, made without any skill on my part, when added to the observations of Captain Barnes and Lieutenant Phillips, and to the information communicated in the official letter from the Court of Directors, in 1743, afford a positive

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demonstration, that " the island of St. Helena abounds with " Archill."

I have thus pointed out two valuable articles of commerce that might be supplied from St. Helena. There are several others of minor importance, which might be obtained at a very trifling expense: amongst which may be reckoned the *Socotrine Aloe*; the *Palma Christi*, and the *Capsicum*. The scientific reader may possibly discover, in Doctor Roxburgh's List of Plants, several others deserving attention.

Of the socotrine aloe, or *Aloe perfoliata*, there are two or three varieties. They all grow exuberantly; and consequently might be cultivated to any extent.

The palma christi,* or *Ricinus communis*, which produces the finest sort of castor oil, although a valuable plant, is totally neglected. Its importance, the facility of its culture, and the various uses to which it might be employed, are so well explained in Captain Barnes's official report, that it would be superfluous to add more upon this subject.

" I beg leave to offer to your notice the following observations on a subject which I humbly conceive would, if properly attended to, materially contribute to the Honourable Company's interests on this island, by affording a revenue of some magnitude, from a neglected, yet very valuable source, with little comparative trouble, risk, labour, or expense.

Some time ago, I had the honour to present you with a small specimen of castor oil, I had extracted from the fruit of the

* The palma christi, of which the vernacular name on St. Helena is *physic nuts*, did not escape the notice of Governor Roberts; for it appears by the consultation, dated the 30th August, 1709, that he ordered them to be planted.

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Ricinus communis, of which you was pleased to express your approbation; since that period, I have at every leisure moment, collected all the information I possibly could respecting this plant; and have ascertained by the incontrovertible fact of experiments, the produce of oil, which on an average may be extracted from its fruit; and I now trespass on your time and patience, in laying the results before you.

As it regards the plant itself, it never has been cultivated on St. Helena, but in its wild state grows in great abundance in most parts of the island, with vigour and luxuriance equal, if not superior to any shrub we have; it bears a prodigious quantity of fruit, which by attention may be obtained all the year round: the plants yielding at the same time berries fit for gathering, and unripe ones in various stages of growth.

The situations most favourable to the palma christi, appear to be those which are humid and sheltered: there are waste lands of this description belonging to the Honourable Company, on which, if plantations of it were formed, immense crops would be produced; for, it is to be presumed, that if the little care necessary was bestowed on its cultivation, its increase would be in vast proportion: the vallies in St. Helena, which are for the most part well watered, are peculiarly adapted for this purpose, and so ready is it to vegetate, that by only dropping the bean on the ground, and occasionally affording it water, it will speedily grow in any soil, and at any season of the year.

The expense of cultivating this shrub, even if many plantations of it were formed, would be inconsiderable; little, if any, preparation of the soil is required for it; neither cattle, sheep, goats, rats, or mice (so destructive to most other plants and fruits) will touch it; fences are not therefore necessary to its preservation;

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and from the time the seed is placed in the earth to the period of gathering its produce, one man is fully competent to the management and care, of at least, 1000 plants.

As a shrub, it might also be rendered very useful. Where inclosures are made by sunken fences, or sod walls, on these, as an additional security, it might be advantageously planted, being of quick growth, thick and strong. Considerable quantities of fuel would also be obtained from it, which might be used in preparing the castor oil.

It would doubtless be found serviceable in other respects, as time and experience would afford opportunities to demonstrate.

In collecting the fruit, neither much time nor labour would be consumed, and consequently little expense incurred. Children (who for the most part are brought up in habits of idleness on this island) might be beneficially employed for this purpose, and their reward made commensurate to their diligence.

The process I adopted in extracting the oil, and which has proved successful, I need not in this report detail; not that I have the least objection so to do to any one, particularly to you, who have always been good enough to honour with your approval the humble attempts I have made to afford satisfaction to my honourable employers; but it may be necessary to state, that it is an expeditious method, sure, and attended with small cost.

The fruit being gathered at a proper age, I can safely assert, that in the several extracts I have made, the produce of pure castor oil has never been less than in the proportion of one-third of the weight of the bean; generally approaching nearer to half the weight, and that the average which may be fairly estimated is full forty per cent.

The refuse of the bean after the oil is obtained, I understand

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to be a very nutritious and wholesome food for cattle, hogs, &c., and of which they are particularly fond.

The modes which would be proper to adopt in the cultivation of the Ricinus, is not for me to attempt an arrangement of; but I take the liberty to state, that supposing an acre of land to be occupied with full grown, bearing shrubs, the best distance they should be from each other would perhaps be ten feet, which would allow 360 plants on an acre, including room for water trenches, &c.: upon a moderate calculation each tree would yield 50 pounds weight of beans per annum; this would amount to 18,000 pounds weight per acre: the produce in oil, taking it only at one-third, would be 6,000 pounds, or 750 gallons; supposing this quantity sold at 12*s*. per gallon (which I am told is far under the market price), would bring £450. sterling. The expense of cultivation, manufacture, and freight to England, say £50.; so that a probable profit of £400. per acre would arise to the Honourable Company. Twenty-eight acres, containing 10,000 trees, would at this rate produce an annual revenue of £11,200.

As the seasons in the equable climate of this island would but little affect plantations of this valuable shrub, calculations may be formed concerning them with some degree of certainty; and I have no hesitation in saying, that the foregoing one is likely to be much within what may be justly expected to accrue from the culture of the palma christi, and the preparation of castor oil from its fruit.

It must, however, be understood, that some time would necessarily elapse (perhaps a year or two) before any considerable advantage could be experienced; and even should not what I have suggested prove to answer in every point, the trial may be so easily made on an inferior scale, and at so little hazard, trouble, and expense, that, with submission, I conceive it would not be

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impolitic to attempt it, especially as the oil which may be so had, would more than repay the cost of obtaining it, by permitting it to be used for burning in lamps; for which purpose I know none better, giving a clear, steady, and brilliant light, and offending neither in smoke nor smell.

If these thoughts should induce any experiments to be made on this subject, I am, under your approval, not only ready to superintend the plantation of the shrub, and the manufacture of the oil, but I am sanguine enough to state, that in case of failure, I will endure my trouble as my compensation."

Of the *Capsicum*, Doctor Roxburgh mentions three sorts; the *cerasiforme*, or cherry-pepper; the *grossum*, or bell-pepper, and the *frutescens*, or shrubby pepper. There may possibly be others which have escaped his notice; for amongst them is that kind which yields the best sort of Cayan-pepper. They all thrive luxuriantly in the low vallies near the sea, producing two, sometimes three, crops in the year. In those places, the plants raised from the seed, bear fruit in nine months; and at Plantation-house, where it is cooler, in eleven; shewing, on the same plant, blossom, unripe and ripe fruit, all the year round.

Those who are experienced in the culture of capsicum, recommend an annual succession of plants, because they degenerate, or become unproductive, after three years. By this means there can be no doubt that immense quantities might be raised, and at a trifling expense. In short, from all that has been stated concerning the mineral and vegetable productions of St. Helena, and its fertile soil and fine climate, it must be evident (as Governor Byfield observed in the year 1730) that "if the inhabitants were "a diligent, industrious, laborious people, such as you want, "and they ought, and this place requires, they might raise many "things for the supply of shipping, which would turn to a very

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" good account; for the island is really capable of considerable " improvement. We have set them a good example, and hear- " tily wish they had discretion enough to follow it."*

Notwithstanding this complaint of a want of diligence, industry, and discretion amongst the inhabitants, I observe by the Records,† that Mr. Byfield's unremitting exertions had brought the island into a higher state of improvement than at any period of its history. During his administration, the inhabitants were so abundantly supplied with island productions, that there was no demand whatever for salted beef and pork from the public stores. The small quantities that remained in store, Mr. Byfield requested permission to have sent to Bencoolen: in order " that it should sell for " a little, rather than be all lost, which must be the case if it " remain here; for we have not any demand or occasion for it."‡ This retrospect to the Records clearly shews, that if St. Helena were properly managed, and agriculture carried on to the extent of which the island is capable, the demand for imported provisions might be reduced to a mere trifle.

It is well known that St. Helena, since the period of its discovery. has been successively, and exclusively appropriated by the Portuguese, Dutch, and English, as a place of rendezvous and refreshment for ships returning from India. No expense has been spared to render it suitable to this important purpose. Many judicious orders and regulations have been from time to time sent from England; and it was particularly enjoined " to render every " acre of ground capable of cultivation, as productive as the " nature of the soil would admit." So early as 1675, the government was told by the Directors of the East India Company, that " We find there is wanting industry and pains-taking in

* Extract from official letter, dated the 24th June, 1730.

† Letter, 26th May, 1730. ‡ Governor Byfield's Letter, 26th May 1730.

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" many of the inhabitants; which we will not permit to con-
" tinue amongst you: for they that will not plant, and take care
" for provisions of their own, we will not supply them: rather
" send them home under the title of drones."

This threat was actually carried into execution by Governor Roberts in the year 1708; and had a temporary effect. But, notwithstanding those orders and menaces, and all that had been done during more than a century to excite a proper spirit of industry amongst the landholders, I found on my arrival in 1808, that 88 acres, in gardens and potatoe grounds, was the total quantity of cultivation. This indeed was barely sufficient for a scanty supply to the shipping: and the produce was sold at the most exorbitant rates. Under such circumstances, it may readily be imagined, that little, if any, of the island produce was consumed by the inhabitants. The fact is, that in 1808, there was a population of 3600 living almost wholly upon the public stores, obtaining most of the necessaries of life in profusion, at prices not exceeding one-third of the prime cost in England.*

Nothing could possibly be more adverse to improvements than so strange and unprecedented a system. The feeding of a population was not only baneful in its effect upon industry and cultivation, but the scanty produce which so small a portion of the lands afforded, aided by a combination to keep up the prices, had enhanced every article of farm produce to such a degree, that the object of maintaining the island, at so great an expense, was almost entirely defeated. The commanders of ships could not purchase refreshments for the seamen at the rates which were extorted: accordingly, they took no more than what they required for themselves and passengers; and the consequence was, that the quantities exported, of island products greatly

* See page 297.

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diminished.* It will scarcely be credited that so determined was the spirit of combination to keep up the prices, that rather than

* *Abstract of the principal Articles of Farming Stock exported* 1789, 1810; *shewing the increase of Prices, and the decrease in the means of Refreshment to Shipping.*

ARTICLES.	Prices in 1810.	COMPARATIVE EXPORTS.		
		1810.	1789.	Prices in 1789.
		Number.	Number.	
Bullocks killed, - -	1*s.* 2*d.* per lb.	176	346	6*d.* per lb.
Bushels of Potatoes, - -	10*s.* to 12*s.*	3288	3468	6*s.* per bushel.
Bunches of Vegetables, -	not ascertained.	375	not ascert[d].	———
Baskets of Apples, Peaches, Oranges, Figs, &c. -	ditto	88	ditto	———
Cwts. of Hay, - -	10*s.* or 12*s.*	139	181	6*s.* per cwt.
Pompions, - - -	2*s.* 6*d.* to 5*s.* each	1118	2032	1*s.* 6*d.* each.
Turkies, - - -	32*s.* to 42*s.* do.	278	725	5*s.* to 8*s.* each.
Geese, - - -	21*s.* to 25*s.* do.	95	28	6*s.* each.
Ducks and Fowls, - -	7*s.* 6*d.* to 12*s.* do.	1810	5104	1*s.* 6*d.* to 2*s.*
Hogs and Pigs killed, -	1*s.* 3*d.* per lb.	170	347	6*d.* per lb.
Sheep, - - -	40*s.* to 60*s.* each.	25	201	21*s.* each.

This Abstract clearly shews that the refreshments to shipping in the year 1789, and particularty in beef, hogs, sheep, and poultry, when the sale of rice and paddy to the inhabitants from the Company's stores amounted to no more than £327. per annum, were far more abundant than they have been of late years, notwithstanding the annual sale of rice and paddy, had augmented to £3600. per annum, in 1809.

From this ten-fold augmentation of the issues of *paddy*, which is the grain used for feeding stock, it might have been expected that the *quantities* of stock raised, would have been proportionally increased: but effects directly contrary have been produced; for, not only have the *quantities* greatly *diminished*, but the *prices* have been *raised* in a triple, or quintuple, proportion. The theory of markets finding their own level, can never be applied to St. Helena. The markets there are always deranged by the arrival of fleets. To these *alone* the islanders look for a sale of their products; and from the captains and passengers they demand whatever prices they choose. Nothing can prevent exorbitant prices being demanded, but the interposition of Government. If the prices were regulated and kept within moderate bounds, a greater degree of industry would be excited, a greater quantity of stock would be raised, and the islanders, by a more extensive sale, would derive a greater profit, or return, during the year.* In 1811, the Government did interpose, and prohibited any person demanding, or receiving, more than five shillings for a fowl: the other sorts of poultry were reduced in the same proportion; and potatoes fell in price, by the effect of the Company's farms.

* See Section XIII. p. 85.

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lower potatoes from 10 or 12 shillings a bushel, and rather than feed slaves and servants, and far less live stock, with so *valuable* a commodity, the crops were actually suffered to rot at the farms, and many cart loads were thrown into the sea. The price of every other article was in the same proportion.

In regard to raising the prices of the island produce, no reasonable grounds have ever existed. From taxes the inhabitants are wholly exempted. They are subject neither to poor rates nor tythes; and they hold their lands at an extremely moderate rent, that is, from 1*s*..6*d*. to 5*s*. or 6*s*. per acre. The war taxes in England have not extended to this place; and which can only be felt, and that in a very trifling degree, upon woollen manufacture, and a few other European articles. The necessaries of life (beef and pork, flour and rice) had remained at the same prices since the year 1772!! From this period to 1808 the beef and pork, supplied from the Company's stores, had invariably been sold to the inhabitants, both white and black, at 4*d*. per pound; flour at $2\frac{1}{2}d$.; rice at a little more than 1*d*., and *paddy** at $\frac{3}{4}d$. per pound. Between the years 1800 and 1808, there being no restriction on the issues of those articles from the public stores,† the consequence was, that in this short period, the annual charges of the island had increased from £69,000. in 1800, to £157,000. in 1808.‡ But, after having most clearly ascertained, by referring to the Company's orders, that neither the low prices at which provisions were sold, nor the profuse issues from the public stores

* *Paddy* is rice in the husk, with which poultry and horses, &c. are fed.

† In justice to the late Colonel Brooke I must observe, that during the whole of his meritorious administration, the demands on the public stores for imported provisions were very trifling; and the refreshments supplied to the shipping were sold at extremely moderate rates. See Comparative Prices, 1789 and 1810, page lxiv.

‡ See page 208.

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had ever been sanctioned by the Court of Directors, a reform was adopted, which, by its gradual operation, produced a reduction in the charges of the island, from £157,356. in 1808, to £104,880. in 1812.*

Another cause of the increase of the island charges, was a total neglect of the orders of the Company to extend cultivation. This would have undoubtedly been the best means of lessening the demands on the public stores, and of augmenting the stock of cattle: but, instead of obeying those orders, the farmers gradually became graziers. Their cattle and sheep were left to themselves on the pastures; and no provision of fodder of any kind was ever thought of, to meet a season of drought. Lands formerly in cultivation were abandoned and overgrown with weeds; and few traces of industry were to be seen. Under such circumstances, the increase of population, that is, of planters and their slaves, had been of no advantage to the island; for in the year 1717, when the total of those inhabitants was only 833, there were 1765 cattle on the island; and in 1812, when the same class of inhabitants had increased to 1732, their stock of cattle was no more than 1494.

Such were the real causes of all the existing evils. Had the same energies which are so conspicuous during the governments of Messrs. Roberts, Pyke, Byfield, and Dunbar,† (between the

* See Note, page 208.

† "*Governor Roberts*'s administration (1708-11) may justly be said to form a new æra in the history of St. Helena. The general disorder into which the island had fallen, and the accumulated defects which had arisen and multiplied under his predecessors, were at once corrected by his able conduct. Attention to business, regularity, and economy, were established in every department; whilst strict justice, and a conscientious regard to the Company's interests, distinguished the measures of this excellent Governor."

"By a vigorous execution of laws, which had long been disregarded, Captain Roberts rendered himself obnoxious to those who were desirous of accommodating their private

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years 1708 to 1746) been followed up, St. Helena, at the present time, would have been in the most flourishing condition. Its

views at the expense of the Company's interest; and, as truth and justice could form no basis for open remonstrance, secret misrepresentation and detraction were the only weapons that could be employed against him. These, together with a plausible statement delivered to the Court of Directors by George Hoskinson, a wealthy planter, of infamous character, at length succeeded in effecting the removal of Captain Roberts. The groundless charges which had been preferred against him, were soon detected; and the unjust treatment of the man whose merits had been so conspicuous, justly excited the strongest indignation."

"*Governor Pyke* was twice in charge of the Government; first, in 1714-19, and afterwards in 1732-38. His attention was principally directed to agricultural improvement. Although he had many obstacles to encounter, yet, in five years, he restored the island from a most ruinous condition, to as flourishing a state as could be expected, considering the difficulties he had to overcome. He has very justly been accused of arbitrary conduct; but upon the whole, the Court of Directors were satisfied with his first administration, and re-appointed him Governor in 1732."

"During five years that *Mr. Byfield* filled the Chair, from 1727 to 1732, his savings for the Company were calculated at *L*25,565. Their sense of his merits was manifested by an addition to his salary, and other marks of favour. The inhabitants also, about five months after their liberation from the galling yoke of Captain Smyth's tyranny, testified their acknowledgments in an address to Mr. Byfield, for his equitable administration; and, in the following year, again took occasion to express their high sense of his just and indulgent disposition. But, when the recollection of former sufferings and oppression had worn off, present blessings were undervalued, and discontents fomented against the man, who, by general confession, had every claim to esteem and affection. A powerful party was formed against him, and a deputation of two of its members was sent home to lay their pretended grievances before the Court of Directors."

"Byfield, indignant at this ungrateful treatment, retired from his situation in disgust; but whilst his enemies succeeded in driving him from the island, they were little aware of the punishment they had been preparing for themselves. Captain Pyke was appointed to succeed, and arrived in March 1732. During his second administration, he fully justified the charge of arbitrary conduct, of which he was accused. The white inhabitants were ignominiously whipped and imprisoned for trivial offences; the military officers fined and suspended without courts-martial," &c. &c.* The day on which Mr. Byfield

* Mr. Brooke's History of St. Helena.

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inhabitants, by being compelled to industrious habits, would have been affluent; and its fertile lands, by yielding more than two crops a year, would have supplied, in abundance, almost every necessary of life.

St. Helena has generally been represented as a barren rock; but this is not the fact. There are two or three thousand acres, (as already observed) covered with excellent soil of unusual depth, and capable of cultivation. Comparing it with Malta, every part of which I have explored, I consider it infinitely superior in capabilities. In Malta there is scarcely any natural soil, and yet that island abounds in corn, cotton, silla, and fruit of all kinds; and the prices of provisions are moderate. Its fields, formed at a great expense, by bringing soil from Sicily, contribute to support a large population, and its cotton-thread is a valuable export.

But, at Malta, every man depends on his own industry: at St. Helena, on the contrary, it is remarkable that all, with very few exceptions, are under no such dependence. If a soldier be employed in labour, it matters not to him whether he be idle or active; he knows he is clothed, fed, and paid, at the Company's expense. It is the same with the slave; for he, poor man, has no stimulus to exertion; he is also fed and clothed by his master, but not paid. And in respect to some others, and the

embarked for England, he gives a very summary view of the state of the island: 'We 'have had,' says he, 'a fine season again; and this place plentifully abounds with *yam*, 'and *beef*, and *idle fellows*.' Letter to the Court of Directors, 24th March, 1732."

"*Governor Dunbar* was unwearied in his exertions (1743-7) to watch over the resources and fertility of the island. He introduced the plough; and his experiments in the cultivation of oats, barley, and wheat, at Long Wood, gave rise to such hopes of success, that a barn was erected there;" but his successor had no taste for improvements, and those promising beginnings were totally forgotten, and no longer thought of, until the year 1808.

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free blacks, they contrive, by extorting high wages, to provide their maintenance by two or three days labour in the week, which enables them to purchase from the public stores, at a cheap rate, a sufficiency of *imported provisions* for themselves and families.

Such was the state of St. Helena, in the year 1808. It is therefore by no means surprising that clamours arose, and that representations were made, concerning the very inadequate refreshment which the island afforded.

But, since that time considerable changes have taken place; the Company's farms have been established; Chinese labourers have been introduced; and a much larger quantity of land brought into cultivation, both by the government and individuals. The objects I had in view by establishing those farms were to place, beyond all contradiction, the capabilities of the soil and climate; to set good examples of English husbandry; to defeat the combinations already mentioned; and to regulate, or keep within reasonable bounds, the market prices. All these intentions had been fulfilled in 1812. Potatoes had fallen in price, from 12*s.* to 4*s.* a bushel delivered at the farms, and to 6*s.* in James's Town. Some of the planters, having superabundant crops, publicly advertised to sell at 3*s.*.6*d.*; but this was rather discouraged until cultivation shall have been more extended, particularly as the commanders of the Company's ships declared they were perfectly satisfied with the reduced prices.

Many of those commanders, as well as captains of H. M. ships, very handsomely acknowledged the great benefits their crews had derived from the ample supplies of vegetable produce;* and it

* When H. M. ship Illustrious arrived at St. Helena on the 19th July, 1813, Captain Skene represented the deplorable state of his crew; being worn out by long residence in India, and many of them severely tainted with scurvy. One hundred and fifty-four men

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seemed very generally to be admitted, that whilst St. Helena can furnish large quantities of potatoes and vegetables at moderate rates, it could seldom be necessary to make any demand for beef at the island price, which is fourteen pence per pound; for in all disorders incidental to seamen after long voyages, (except in cases of great debility,) it is probable that a vegetable regimen, combined with ships provisions and wholesome beer, may be nearly, if not wholly as efficacious in promoting a recovery as a change from salt to fresh meat. The question seems to be, whether sixteen pounds of potatoes (which cost fourteen pence) be equivalent to one pound of fresh meat. The experiment is worthy a trial, if not already made.

From these recent facts, it will readily be perceived how very easily St. Helena might be rendered the most perfect and complete place of refreshment for ships in the world. All that is wanting is to promote and encourage the culture of the lands. If the present scale of cultivation were enlarged, and plantations of trees extended to many of those parts that are unfit for other purposes, there cannot be a doubt, that every necessary refreshment for fleets, and food for the inhabitants, as well as useful timber and fuel, might be produced in the greatest abundance.

The laudable spirit for improvement, which at present exists among some of the landholders, affords a fair prospect of attaining all these objects. "Plantations of trees," says Governor Wilks,* "are become a favourite object with most of the landholders, "since the destruction of the goats, has begun to shew that trees

were upon the sick list, incapable of duty: but on the 1st of September, when he sailed for England, most of them were restored to health; and the sick list was reduced to thirty. Their recovery was chiefly ascribed to the abundant use of vegetables, and wholesome beer.

* Governor Wilks's Agricultural Report, dated 10th March, 1815.

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" can really be preserved:* and also, since plants have been " procurable. According to present appearances, penal obliga- " tions will be superfluous. At present, my chief doubt arises " from the apprehension that I shall not be able to supply the " whole of the demands for the present year."

It has been already stated, that the climate of St. Helena is remarkably pure and salubrious, and wholly exempted from gales and tempests. There is abundance of fine water, and a safe and commodious anchorage all along the leeward coast, where ships are not only sheltered by the high land, but are most powerfully protected by the fire of the batteries. And as St. Helena is in itself a place of great strength, situated in the direct tract of ships returning from India, it seems impossible to imagine a port more peculiarly adapted for the purposes to which it has been so long appropriated.

The Cape of Good Hope, since it has become a British colony, appears, however, to have been considered as a more suitable rendezvous. Fresh meat, flour, and wines, can undoubtedly be procured there upon more moderate terms than at St. Helena. I know of no other superiority that the Cape possesses; and I am firmly persuaded, if the circumstances of both climates, more especially the uniform and moderate breezes of St. Helena, were compared and contrasted with the tremendous gales to which the latitude of the Cape is subject, at all seasons of the year,† that

* The advantages that were expected to result from the extermination of the goats have been realised: they are pointed out in the first Section of this Work: which is almost *verbatim* my official minute upon this subject, dated the 20th of September, 1810. Although this measure met with some opposition in the first instance, there is not, now, one person on the island who entertains a doubt of its expediency.

† In the month of November, 1799, which is a summer month, H. M. ship Sceptre and every vessel in Table Bay, was driven on shore. Had there been a valuable India fleet there at the time, it is highly probable that the whole would have shared the same fate.

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such a comparison would lead to a conclusion, that the Cape of Good Hope is not only inferior to St. Helena as a rendezvous, but is of all places the most unsafe, and the most improper for the resort of valuable fleets.

In order, however, that the reader may form his own judgment on this question, I shall here present him with an account of the climate of the Cape, as given in a recent publication.*

"For nearly half the year the south-east wind prevails, and at times rages with the most desperate violence. The inhabitants of Cape Town are apprised of its approach, by observing at first a small white cloud, or mist, rising between the mountains called the Devil's head and the Table mountain; soon after the Table mountain itself becomes enveloped in thick cloud or mist, and the storm almost instantly begins, and roars in the most terrific manner, without ceasing, many days together. At its height nothing can scarcely stand against it. Waggons drawn by twelve or fourteen oxen are frequently blown out of the road."

"These dreadful storms continue, for different periods, from three or four, to nine or ten days; and between the periods the heat is very intense. The spring opens about the end of August, and the two hottest days I ever remember, were the Christmas days of the years 1811 and 1812; on the former of which, by a thermometer in Cape Town, the degree of heat was, at half-past nine in the morning, at 120 degrees, and was thought to be still more in the advance of the day."

"During the prevalence of those hurricanes, not only the sensations of invalids are acute to an extreme, but even the robust and the healthy feel its dreadful effects. The frequent and almost momentary transitions from heat to cold are extremely unpleasant and dangerous to an English or European constitu-

* The Importance of the Cape of Good Hope, published in 1814, by R. B. Fisher, Esq.

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tion, until it is inured to it. The finest part of the year is termed the winter, commencing about March or April, to the latter end of August, or beginning of September. This is the rainy season, when it frequently rains in torrents for many days, and the houses and whole town are deluged with water. But in the intervals of rain the temperature of the air is remarkably mild and pleasant, and the atmosphere most uncommonly clear. It is seldom or ever very cold, except that sort of cold which arises from damp. The tops of the mountains are at this season covered with snow; but I scarce ever remember to have seen snow on the plains."

"In Table Bay, which is known to be excessively deep and rocky, and as it were the surrounding country reversed, for many months in the year no ships can land, or even enter; and, if any, being before in the Bay, continue there during those months, which is sometimes unavoidable, they ride with very great difficulty, and in considerable danger, with head and bow anchors, which are frequently obliged to be shifted at the turn of tide. Even in the finest season, and often in the calmest weather, there is an immense surge, which there is nothing to break. There are no harbours, docks, or quays; a complete open road-sted, and nothing but a long projecting jetty about 300 yards, on which if you cannot safely land, you must be content to go stern foremost with the surge, and be left on the sand."

"There are only six months in the year in which ships ever venture into Table Bay; and during the winter season, the Admiral on the station, and the men of war, constantly go round to False Bay, and take shelter in Simon's Bay. The number of vessels said to have been lost in Table Bay is almost incredible. I myself saw two ships, that, in the same night, broke from their anchors, run aground, and were totally lost, and when the weather was not very tempestuous."

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This account of the dangers of Table Bay, and the frequency of long continued and violent tempestuous gales, must satisfy every disinterested person, that St. Helena is, from its local circumstances, infinitely superior, in every respect, as a place of rendezvous and refreshment. At the Cape, "the number of "vessels said to be lost is almost incredible." At St. Helena, there is not, on record, a single instance (nor can there ever be) of a vessel being lost by bad weather. How great then must have been the value and importance of this small island to the commercial interests of the East India Company! If their ships, during the last century and a half, had been compelled to resort to the Cape instead of St. Helena, it may readily be imagined that, in such a climate, immense losses of ships, and property, and lives, would have been sustained; and that the Company, at the present time, (as they never insure) must have been *minus* several millions sterling!

It is said that False Bay and Saldanha Bay afford some degree of security against storms: but admitting this to be fact, still those bays are objectionable, because they are situated in a boisterous region; consequently, neither of them could ever be made so perfectly secure against the elements, (and I may add, against an enemy) as the port of St. Helena is at the present moment.

To erect fortifications and public buildings, in short, to make new settlements at Saldanha, or False Bay, would necessarily be attended with prodigious expenses; after all, no public benefit could possibly arise: at least in the refreshment of ships. Indeed from all I have heard, I have great reason to believe, that few commanders, on their returning voyages, would optionally, for the sake of refreshment, run the risk of their own property by remaining in those latitudes a longer time than is necessary: from which indeed they seem at all times glad to escape as soon

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as possible, and to make for St. Helena, a safer port, where they can have every article they stand in need of; although, of late years, at rather a greater expense,

I have already noticed that fresh meat, flour, and wine, are the only articles which are procurable at the Cape in greater plenty, and at a cheaper rate, than at St. Helena. The first, I have endeavoured to shew, is not very essential to the refreshment of seamen, where vegetables are in abundance. The second is never required by the India ships, because they are so well provided for the voyage, that tl ey frequently dispose of the surplus to the inhabitants, and sometimes to the Government of the island. In respect to Cape wine, by the late arrangements, there has always been (since the withdrawing of spirits from the island) a provision for the garrison in the public stores: consequently, some could at any time be spared for the ships if it should be wanted.

Hence it must be obvious there can be no want of refreshments: and as all those scenes of riot and intemperance, which had for many years disgraced this settlement, are happily at an end, by a prohibition on the import of spirits, and by the introduction of breweries and beer-houses, I will venture to say, there is no sea-port, or garrison, in the world, where sailors and soldiers can be permitted to land with so little risk of committing excesses. This, indeed, was clearly ascertained, in August, 1813. Captain Halliday, commanding His Majesty's ship Tigre, permitted 300 of his men to go on shore in one day. They went into the town and country, conducting themselves in the most orderly manner, and retired quietly on board in the evening, without a single instance of intoxication.

When this fact is contrasted with the following account of the exhibitions in garrison, a few years before, some idea may be

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formed of the manifold advantages which have resulted from the abolition of spirit houses, and the introduction of breweries.*

* The houses for retailing spirits were abolished on the 15th of May, 1809. The garrison at that time consisted of about 1250; of whom 132 were sick in hospital. Four months after that abolition, the patients were reduced to 48: but, as it was found impracticable to put down intemperance, whilst *cheap spirits* were on the island, the Government adopted measures to prevent any being landed: which have completely had the desired effect.

Soon after the total abolition of spirits, in 1810, the patients in hospital gradually declined to between 30 and 40; which, (considering there were, at that time, about 100 non-effectives, and others far advanced in life) were as few as could well be expected. This surprising reduction is to be ascribed solely to a change of diet, arising from a more abundant supply of vegetables, and from substituting wholesome beer for an abominable deleterious spirit, such as new Bengal rum or arrack; of which, for many years before, more than 300 leagers were annually consumed on this small island!

"It will hardly be credited," said the late Doctor Adam Baildon, in his official report, 24th November, 1808, "that soldiers and others are frequently brought to the hospital as far advanced in real scurvy, as if they had just landed after a long voyage: and many who are brought for other complaints, are considerably tainted with this disease.

This is to be ascribed to the great prevalence of drunkenness, which is a subject, in my opinion, deserving the most serious attention. The health and comfort of the soldiers, and consequently the strength of the garrison, are so very materially affected by it, that to find some method by which it would be effectually prevented, becomes a consideration of no small importance.

On my arrival I was much surprised at the great number of patients attacked with liver complaints. The mildness of the climate led me to suppose that such complaints ought not to be common here, and I very soon discovered, that the cause of those complaints, and of four-fifths of the diseases in the hospital, originate wholly in the excessive use of spirituous liquors. In the colder climate of Britain, liver complaints are rarely met with, and are generally confined to hard drinkers; and more especially dram-drinkers. It is in this way that most of the spirits here are consumed. Indeed, the use of all intoxicating liquors produces a craving for a repetition; and the stimulus given to the stomach is so sudden and so powerful, and the degree of exhaustion that follows so great, that this craving in those accustomed to spirits, often becomes more powerful than hunger or thirst; so that the soldiers in this state, though perfectly certain of punishment, will commit almost any crime rather than forego their drams. It is well known to every officer

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Upon my arrival, in 1808, I was forcibly struck with the disorderly conduct of the soldiers. Scenes of the grossest intemperance were daily exhibited at the spirit houses. Crowds of soldiers and sailors were in constant attendance, rioting and

in garrison, that in drunkenness alone, originate 19 in 20 of the crimes for which the soldiers are brought to punishment."

In a subsequent report, Doctor Baildon notices more particularly the appearances of St. Helena scurvy. Upon these appearances, and upon the anti-scorbutic qualities of nopal, he reported as follows.

"*21st August*, 1809.

"I consider Doctor Anderson's discovery of the anti-scorbutic and nutritious qualities of the nopal, to be of the greatest importance to this island. Vegetables are here very scarce; wherefore, if the opuntia had no other recommendation than that of being a pleasant vegetable, it must be considered as a great acquisition to the inhabitants in general. I have formerly stated to you, that the men of this garrison, from their living principally on salted provisions, and being seldom able to procure vegetables (joined to the abuse of spirits,) are generally afflicted with the scorbutic diathesis; which appears by their spongy gums, purple spots, and by scratches, often degenerating into livid, troublesome sores, &c. Some I have seen admitted into the hospital as bad with scurvy as if just landed from a long voyage. As an addition to our hospital diet, the opuntia will, therefore, be a most valuable article. I trust, indeed, that if cultivated in sufficient quantity, it will soon be the means of altogether preventing the soldiers from acquiring the scorbutic taint; however this may be, it will certainly add greatly to their comfort as an article of common diet. It must appear from all I have stated, that the several species of opuntia will be extremely useful on this island, for the following purposes.

1. As a pleasant vegetable for common use.
2. As a most important addition to the hospital diet in general.
3. As an article of food for the soldiers, adding to their comfort and preserving their health.
4. As an anti-scorbutic, used raw or otherwise, for seamen landed here.
5. For the supply of ships while here, as an article of diet, and as an anti-scorbutic to carry to sea.
6. As fences.
7. As an ornament to the hills of James's Valley."

Doctor Baildon's Letter, 21st August, 1809.

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boxing in the public streets. The roads leading to the country were often strewed with drunken men, laying insensible, both white and black. When the means of purchasing spirits were exhausted, some of those abandoned wretches had no other resource than in theft and burglary. Of their nightly depredations I had numerous complaints: but so cunning and dexterous were the band of thieves, at that time in garrison, that I could never obtain sufficient evidence to convict them. At length, in addition to restrictions, and afterwards the abolition of the spirit houses, I determined, as the only expedient of rooting out such licentiousness, to get rid of the most notorious characters. Officers commanding corps were directed to furnish lists of all who had been tried by courts martial for "irregular behaviour;" connected with suspicions of theft and house-breaking. The number was 42, of whom 23 were selected and sent to Bengal, enlisted for five years: this had the desired effect, and depredations on the Company's store rooms, and on the dwellings of individuals, ceased.

St. Helena, besides being valuable for refreshment to the East India Company's fleets, might become of considerable utility as a place of seasoning for their troops destined for India. Its appropriation to this purpose was suggested by Governor Brooke, about the year 1796, after he had, at different periods, forwarded drafts to Madras to the number of 1210. These disciplined soldiers, prepared for a warm climate, by a few years residence on St. Helena, were found far less liable to diseases (as might naturally be supposed), than those who were sent direct from England. The havoc that was made amongst some of His Majesty's regiments, about the year 1781-2, when they took the field, immediately on their arrival, compared with the healthiness of the St. Helena detachments, affords a striking proof of the good

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effects of having troops previously seasoned before they are sent to India.

It is therefore obvious, if the recruits enlisted for India were to be sent to St. Helena, and exchanged for an equal number of seasoned soldiers, it would be a means of saving many lives that otherwise would fall a sacrifice to the disorders incidental to warm climates. The India recruits might remain from two to five years, in the option of the Governor; or proceed, at any time within that period, to their destination: or return to England, after the expiration of their term of service. If this plan were carried into effect, it would moreover check that spirit of insubordination, combination, and discontent, to which some men are liable, when too long kept in one place.

Knowing from experience, that many abandoned characters still remained in garrison, in 1812, after the mutiny, and knowing their unceasing thirst for spirituous liquors, and the improbability of some incorrigible drunkards among them ever being contented without spirits, after having been so long habituated to intemperance, I suggested to the Court of Directors, that all those who were in the disposition to serve in India should be immediately relieved. This would enable the Governor to weed the garrison, by selecting for India the worst subjects (who could do no mischief there); and by such means there would be an end to all discontents and clamours; and the St. Helena corps in a short time would be composed of a peaceable and sober class of men, on whose fidelity and zeal a perfect reliance might be placed.

With a garrison composed of such men, placed in the exterior posts, and forming three reserves, with field-pieces, in the interior, so distributed as speedily to reinforce the points attacked, I should feel a perfect confidence, that no external attack, however formidable, could possibly succeed.

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In order to illustrate this opinion, it will be necessary to offer a few general remarks upon the natural strength of the island; and upon the means it possesses of giving perfect security to ships at the anchorage, as well as of opposing the most vigorous resistance to an enemy's attack.

The natural strength of St. Helena consists in its compact form and size, and in its inaccessible coasts, formed by an almost uninterrupted chain of rocks, or mountains, rising in nearly a perpendicular direction, to the height of from 500 or 600, to more than 1200 feet.

It is well known that vessels bound to St. Helena, take care to be considerably to windward; so that by steering afterwards a westerly course, they can hardly fail of falling in with it. After gaining sight of the land, they steer towards the north-east end, in order to fetch the road, by keeping close to the Barn and Sugar-Loaf Point; for when they attempt to come round by the south-west point, they generally find themselves so much baffled by flurries of wind, issuing in all directions from the vallies, that they cannot proceed without standing off to a considerable distance, in order to get the trade wind. But, even then, they find it extremely difficult to work into the road; because the wind to leeward of the island seldom blows for five minutes together in the same direction. In addition to those difficulties, an enemy's fleet would have to work in, in the face of a great number of guns; which would not fail to rake them; and after coming on the bank, perhaps within less than a mile of the shore, they might attempt to warp in, which would be wholly impracticable, on account of the constant and excessive fire from the batteries on shore. The nearer the ships approached, the greater would be the risk; particularly from the fire of the elevated batteries, which would penetrate the upper decks, and pass through the hull under water, and even into their magazines;

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so that there would be imminent danger of losing the ships, both by sinking and blowing up.

It must nevertheless be observed, that although such a wind as would enable vessels to come into the road by South-west Point, be very rare in this latitude, yet westerly winds have been known to prevail for a week together. These, however, seldom occur oftener than once in five or six months, and as their duration is often momentary and always precarious, it would be too great an uncertainty for an enemy, after a long voyage, to wait here in the expectation of so very precarious an event.

From those observations it will appear that there is no certainty of arriving at James's Town without coming round the north-east end of the island. And even then, if ships, after doubling Sugar-loaf Point, where the trade wind generally leaves them, and the eddies commence, do not keep close under the shore all the way between that and the road, they run great risk of being blown entirely off the bank; or of being compelled to come to an anchor at no great distance from the batteries.

Ships thus obliged to hug the shore between Sugar-loaf Point and the road, gives the island a prodigious advantage over an enemy who might attempt this route; because he would be exposed to such a continued and multiplied fire from the batteries between Butter-milk Point, and James's Town, as scarcely any number of ships would be able to overcome.

Rupert's Bay, James's Town, and Lemon Valley, are the principal landing places on the leeward coast. All these are well fortified by fleur d'eau batteries, provided with furnaces for heating shot, and flanked by cannon placed upon the cliffs far above the reach of ships' guns. Mortars and howitzers for showering grape upon ships' decks, or upon boats attempting to land, are also provided. In short, it seems wholly impossible to force a descent

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at any of those points. Even admitting that the enemy's troops got on shore and succeeded in carrying the fleur d'eau batteries, they would then be exposed to inevitable destruction, from the tremendous fire from the heights, and above all from the immense quantities of grape (or even stones) that might be thrown (with very small charges of powder) from howitzers and carronades of large calibre placed upon the heights, against which it would be wholly impossible to find shelter.

Besides the principal landing places above mentioned, there are several ravines, or vallies, interspersed throughout the coast, where an enemy might undoubtedly land, if he were not opposed: but, most of these are also protected by batteries; or are so easily defended by rolling stones from the heights, that no body of troops attempting to gain the interior by these ravines could have the smallest chance of success.

Of those ravines, Captain Mitchell, an able engineer, who was sent to the island in 1765, gave the following description.

"The ravines, or *vallies* (as they are improperly called) are extremely narrow, and remarkably rugged. They seem formed by nature for carrying off the torrents which precipitate themselves from the interior of the island; and they all terminate towards the coast in beaches, where an enemy, if not opposed, might disembark without much difficulty. But the ascent being extremely steep and rugged, and terminating at a great distance from the coast, it would be impossible for an enemy to get into the country, if ever so inconsiderably opposed. I will venture to say that 500 men would be much more than a match for ten times that number in this situation."

I not only concur in this opinion, but I trust I shall make it appear that two or three men stationed on the heights just above the entrance of any of those ravines, would render it utterly

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impossible for any number of troops, however great, to approach ten yards within the landing places. This opinion is founded upon repeated trials made at Goat-pound Ridge, which is situated close to the landing place at Young's Valley, and 729 feet above the sea.

A single stone, which weighed about 80 pounds, being set off from the rop of this ridge very soon acquired a rotatory motion, and, at first, rebounded gently upon the declining surface. As the velocity of the stone was accelerated, the force with which it rebounded and struck the loose and brittle rocks increased; and at each rebound numerous stones and fragments of rock were detached. These, following in continued succession, and spreading to right and left operated precisely as the first stone; so that by the time it had reached the bottom of the hill, myriads were in its train, which covered a space of at least 100 yards, and flew with such prodigious force across the ravine, that many of the largest stones ascended to the height of 60 or 80 feet upon the opposite hill. Such was the astonishing effect produced by a single stone, that it seemed to me, if a whole battalion had been drawn up in the ravine, that not a man could have escaped alive.

This experiment, will serve to shew the mode of defence that is applicable to all the narrow ravines which have not been fortified. Indeed, it must appear, that nothing can be necessary at such places, but a good look-out, a few iron crows, a collection of stones, together with some blue lights, or fire-balls, to roll down the hills at night, for the purpose of shewing the position of the enemy if he should actually have entered.

In aid of this simple, but most destructive kind of defence, I must further observe, that in conformity to existing orders, and regulations, one of the reserves, with field pieces, would instantly

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move towards the point of attack; both for the purpose of reinforcing it, and of occupying the most commanding positions with guns. From those positions, by *ricochet* firing of round and grape, any of the ravines attacked, might be enfiladed, or raked, almost from one end to the other: so that to gain the interior of the island along the ravines must appear too hazardous, and too hopeless, for an enemy to attempt.

The only place remaining to be noticed, on the leeward side of the island, is Thompson's Valley, which is well protected by guns on the heights in the rear of the landing place, and upon the Castle rock. This ravine is also sufficiently narrow to admit of being defended by rolling down stones, and may therefore be considered as perfectly secure against an enemy.

From Thompson's Valley to South-west Point, the coast extends about a mile, which is every where inaccessible to troops, as is the rocky shore from South-west Point to Sandy-bay Beach, a farther distance of about six miles. There are, I believe, one or two fishermen's paths in that extent of coast; but these are, in all places, so steep, rugged, and difficult, that no invading troops could ascend them; particularly if opposed by the reserve at Thompson's Hill, to which are attached field pieces for the purpose of repelling an enemy, at whatever point he might attempt to ascend in that quarter.

"The windward side of the island," says Captain Mitchell, "comprehends all the eastward coast lying between the rocks called the *Needles* and *Sugar-loaf Point*: a distance of 16 miles: for, although the south-east wind does not blow directly on every part, yet the whole is very considerably affected by it: and this line of coast, comprehending nearly two-thirds of the whole, is seldom without such a surf as would deter an enemy from any attempt to land. In fact, there are no vallies, or bays, here,

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(except Sandy Bay which is well fortified) that can properly be called practicable: for, although some of them have beaches, where, in smooth weather, troops might land, yet the difficulties to be surmounted before an enemy could get into the country are so very great, that I apprehend nothing less than absolute negligence, and supineness in the garrison, could ever endanger the island from an attempt in this quarter."

If this was the opinion of a skilful engineer fifty years ago, how infinitely more secure must be the island of St. Helena at the present moment, improved as it has been by the zealous and indefatigable exertions of Governors Brooke and Patton, who, during a period of twenty years devoted their attention to the grand object of placing this important island in a condition to repel the most formidable attacks.

But, nothing has so essentially contributed to the security of St. Helena against external attack, or stratagem, as the introduction of telegraphs.* These are erected on the most commanding heights, some of which are two thousand feet above the level of the sea; and are so connected one with another, and so spread all over the island, that no vessel can approach, in any direction, without being descried at the distance of sixty miles. The vast utility of such an establishment, in a mountainous country, where any other mode of conveying intelligence must necessarily be slow, may readily be conceived. The elegraphs have, in fact,

* The telegraphs were first established by Governor Patton in the year 1803. They are his own invention, and of a very simple and cheap construction; and have been found fully to answer every purpose for which they were intended.

The East India Company's and Sir Home Popham's numerary signals are also made use of. By these, His Majesty's and the Company's ships are all known by their numbers long before they reach the island: and as no ships whatever are permitted to pass Banks's Battery, without sending a boat on shore, it must be evident there is no possibility of taking the island by surprise.

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placed the whole island under the eye of the Governor; for he is instantly apprised of every material occurrence in any part, or even within sight: and, with equal celerity, he can convey his orders wherever they may be necessary, both during the day and night. In short, the troops can be under arms at a moment's warning; reinforcements can be sent to the points of attack, or posts occupied, or any other military operation directed, simply by a code of signals.

With such means of receiving information, and of sending orders, a Governor of St. Helena is as fully prepared to oppose a vigorous resistance, at every point of his extended line of defence, as if he commanded within a small fortress.

In order to illustrate all that has been stated, I shall suppose an enemy's fleet in sight. The moment this is ascertained the general alarm is fired; which is the signal for the troops to get under arms; to reinforce the batteries, and to send detachments to the three reserves in the interior. Thus, all the troops, and every effective man on the island (for they are all soldiers*) are

* *Extract of a Letter from the Governor and Company of Merchants of London trading to the East Indies.*

19th December, 1673.

"That all the planters be by the Governor listed under either of the aforesaid commanders, or such other officers as the Governor and Council shall think fit, that may exercise and train them up in arms, at least once in two months, to qualify them for the defence of the island. And that particular places, or posts, be assigned by the Governor, whereunto all and every one of the said planters may repair, and have a rendezvous when thereunto required by the Governor; for though we do not hereby require the planters to keep constant watch, as soldiers, during the time we shall continue soldiers in pay, yet we do hereby strictly require, in case of the approach of any shipping, and especially upon discovery of any enemy, or any general alarm, that they do repair to their respective posts, and observe such orders in a way of military discipline, according as their respective officers shall be directed by the Governor and Council, for the safety and defence of our aforesaid Island; *it being one of the conditions on which we have granted them their land and other accommodations.*"

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placed in the most advantageous positions. Should the enemy make demonstrations of landing at one or more points, information would instantly be communicated by the telegraphs; upon which the Governor would order such movements, or dispositions of the reserves, as he may judge proper.

From this concise view of the mode of defending the island, and from all that has been related concerning its great natural strength, its batteries, and the facility of defending every practicable landing place, by rolling stones from the heights, it must be evident that, with such dispositions of the troops, St. Helena is absolutely impregnable by an open and regular attack. I have had opportunities of examining Gibraltar and Malta, and I must confess, that the impression left on my mind is, that neither of these places are to be compared in strength with St. Helena. This superiority arises from its high and commanding coasts; from there being no unfortified landing places that do not admit of being defended by stones: and from several other circumstances already explained. Nature, indeed, has been so wonderfully profuse in giving strength to this place, and has left so little for art to perform, that out of twenty-eight miles of coast, the fortified lines of defence, collectively, do not exceed eight hundred and fifty yards. In short, it appears to me, under all the circumstances above-mentioned, that St. Helena is not only perfectly secure against surprise, and external stratagem, but capable (even with a moderate garrison) of repelling the most formidable attacks that can be made upon it.

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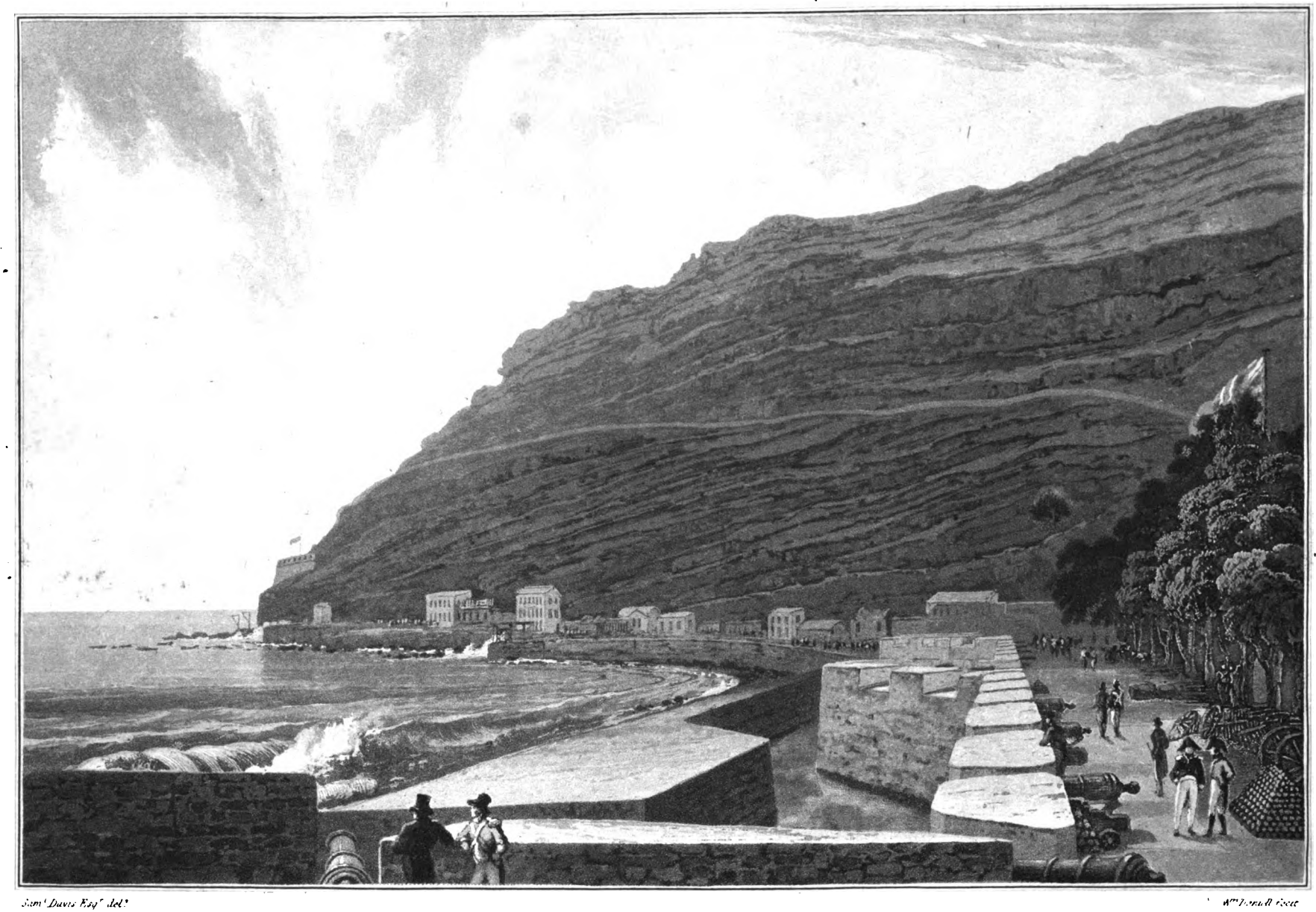

Saml Davis Esqr del^t

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The lines across the front of James's Valley. St Helena.

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TRACTS.—PART I.

SECTION I.

St. Helena once a woody Island—cause of its Denudation—Plans proposed for restoring Wood, and extending Cultivation—the Institution of Goat ranges injurious—Extermination of the Goats recommended.

In the year 1502, when St. Helena was first discovered, its interior was one entire forest—even some of the precipices, overhanging the sea, were covered with gum-wood trees.

Goats, unhappily (as it has proved) for the island, were first introduced in the year 1513, and from this period to 1588, so greatly had they multiplied, that Captain Cavendish relates "there were thousands, and that they were seen one or two hundred together, and sometimes in a flock almost a mile long.

Those early accounts, in respect to wood, are fully corroborated by the records, by the testimony of persons now living, and by the fragments of trees which are occasionally found on those hills that are now the most desolate and barren.

Within the last fifty years many gum-wood trees grew on the hills between Rupert's and Dead-wood.—This name, indeed, evidently implies there was a forest there. On the Barn-Hill, and near Lot's Wife, pieces of ebony are still remaining; and there is a tradition that a thick wood occupied Half-tree-hollow,

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between High Knoll and Ladder Hill; and that some persons, who had advanced therein, lost their way and perished.

But the most remarkable and positive testimony of the existence of "huge forests" on the Island of St. Helena, is recorded on the consultation dated the 12th of July, 1709, in the following words:

"Our necessity is so great for want of coals, that we thought it would have put a full stop to our work, but do find that ebony wood will burn lime, and being informed that there are huge quantities of that wood which lie dead on the hills near Sandy Bay, the Governor and Captain Mashborne went there to view it, and found the report true, for that there is abundance indeed, and just by that place where the wood lies, are mountains of extraordinary lime stone; and it will be much cheaper to our honourable masters to bring lime from thence, ready burnt, (being light) than to fetch that sort of wood (which is very heavy), and bring it to the castle in James's Valley."

We have thus a series of clear and satisfactory evidence that St. Helena, when first discovered, and for many years afterwards, abounded with trees; but of those "huge forests" how few vestiges are now to be seen!

The cause of this sad reverse, in the aspect of the island, is readily ascertained by what is daily passing before us. Ebony, red-wood, white cedar (or gum-wood tree), are all indigenous. They shed great quantities of seed; and numerous plants are seen annually to spring up, where the trees are secured from the trespass of goats, and black cattle. Such is the case at Longwood: in some places there are absolutely impervious thickets.—Does not this prove what would naturally take place if the young trees remain undisturbed; and that many parts of the island would, in the course of a few years, be again covered with wood?

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Those young plants are preferred, by the goats, to the finest pastures: they are consequently, when exposed to their depredations, greedily devoured.*—Even the leaves of the old trees, when within reach, do not escape their ravages. The young trees having been in this manner cut off, and the parent trees having perished through age, it is no wonder there should be no succession; and this is the obvious cause that, since the period of the introduction of goats, this formerly woody island has been wholly denuded. Some of the peaks and highest lands, owing to their steep and abrupt acclivities, are the only places which have withstood their unceasing depredations.

To the goats, therefore, is solely to be ascribed the total ruin of the forests, an evil which is now severely felt by every individual, and which would undoubtedly become much more serious, if the Company should add the freight and charges to the price

* The following extract of a letter from the Government of St. Helena to the Court of Directors, dated 9th of July, 1745, affords a positive proof that the disappearance of the forests of St. Helena is entirely to be ascribed to the goats—and not to any physical cause, or change, which is supposed by a late writer to have produced a similar effect upon some hills in Ireland—that, in former times, were covered with trees.

"Finding," say the Governor and Council, "that great quantities of ebony trees, which "grew in and about *Peak Gut*, in their tender growth, were barked and destroyed by the "goats that ranged there, we thought it for your Honors' interest, for the preservation of "the wood, and the welfare of the island, to order the goats there to be killed."—To this representation the Court replied, "The goats are not to be destroyed, being more useful "than ebony."

Such is the aptness of the seeds of the indigenous trees of St. Helena to take root, that I have often observed myriads of seedlings spring up, amongst the grass, immediately after the setting in of the rains: but these were of course nipt off by the cattle. All that is here stated, and many other circumstances which have come to my knowledge, impress me with a strong conviction that if St. Helena were again uninhabited, and if cattle of every description were removed, for a period of twenty years, the island would again be covered with wood.—*May* 1813.

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of coals. The mischief occasioned by the goats, added to the neglect of fencing, and planting trees, has greatly encreased the demand for imported fuel; and the loss to the Company upon the article of coals, in 1808, amounted to no less a sum than £2729..7..8.

To obviate, as much as possible, a further increase of this expense, it is become absolutely necessary that the utmost attention should immediately be given to those ordinances that regard fencing and planting. It is indeed fortunate there are here some trees or shrubs, of a very rapid growth, peculiarly adapted to the purpose of fences, as well as fuel. Of those, the most valuable for both purposes, is that hitherto despised plant the Palma Christi. It intrudes itself every where, and is turned out of every garden and plantation, being considered in no other light than a troublesome weed.—But having remarked how rapidly it becomes a tree, I naturally concluded it might be useful in the formation of fences; and accordingly I commenced an experiment in September, 1809. The seeds were sown and intermixed with some wild brinjal (a species of solanum), upon an elevated bank four feet high, and about six feet in breadth. In the short period of twelve months I have now a beautiful and impenetrable fence about five feet in height. The stems of the Palma Christi are already about two inches in diameter, and the branches are covered with nuts. The success of this trial has determined me to improve the old fences, and to form new ones at Plantation-house-farm, of the above description, about eight or nine feet in thickness. The addition of the blackberry, entwined among the strong stems of the Palma Christi, would undoubtedly make a fence not inferior to the best hedges in England.

What an advantage it would be to the land-holders, and what an improvement in the aspect of the island, to substitute this

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cheap sort of fence for their stone walls! Besides, if the Palma Christi were extensively cultivated, which might easily be done by making the hedge-rows 20 feet or more in thickness, the people of this island may not only speedily raise fuel, but may also participate in a lucrative branch of commerce, which they have hitherto left to others. It is well known, that considerable quantities of the oil of palma christi are annually sent from India to England, where it fetches a very high price: in no part of the world can it thrive better than at St. Helena.

If the above sort of fences were generally introduced, they would both secure and shelter the lands.—Cultivation might then be carried on with facility, and without interruption, and the Planting Law might be easily complied with; for the lands, at first brought into cultivation, might be converted into plantations of trees for useful timber, in the proportions required by the original tenures. Other lands might afterwards be inclosed and cultivated with corn, potatoes, mangel wurzel, lucerne, guinea grass, &c. These valuable artificial grasses might indeed be raised among the trees as crops are in Italy: but it is much to be apprehended, that unless the goats, as well as sheep, could be confined, they will defeat every plan of improvement, and will occasion constant vexation from their incessant depredations. Wherefore, as it is morally impossible to restrain those animals without incurring an enormous expense in fencing the lands, there seems to be no other possible mode of checking the further progress of the vast ruin and waste they have committed, nor any prospect whatever of restoring wood to the island, than by their total extermination, retaining only a very limited number of sheep to each land-holder, on condition, however, that they are tended, or confined, entirely to his own lands.

The measure of extermination was resorted to by the planters

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in the year 1731, and was completely successful.—Indigenous trees sprang up spontaneously, and many parts soon became well wooded, where no trees had been suffered to grow for many years.

It is therefore evident that the extermination of goats, and a reduction in the number of sheep, cannot fail of being a most important benefit to the whole island: and that, without this previous step, there can be no hope of ever rendering it a valuable property to the Company: and with it, there cannot be a doubt, from the success of trials upon a small scale, in various parts of the island, that every species of improvement in agriculture and planting, might be carried on successfully and extensively, and with infinite advantage to all parties concerned.

I am perfectly aware of the arguments adduced in favour of the goats—I have weighed them maturely, and I am thoroughly convinced the whole are nugatory; for it must be admitted that a few sheep, imported by this Government from the Cape, would lessen, or, perhaps, render unnecessary, any demands on the planters for supplying the Hospital; and that a large stock of hogs, upon every farm, with the limited number of sheep beforementioned, would be no bad substitutes for the want of goat-flesh. Hogs are also preferable to goats, on account of the great quantities of valuable manure they would produce for meliorating the lands.

There is, indeed, no species of husbandry so well adapted to St. Helena as that of hoggeries.—By their means, the most extensive produce in yams, potatoes, mangel wurzel, &c. might be consumed on the farms; which it would be impossible, in this mountainous country, to carry to market, even if it were in demand. For hogs there would also be a ready sale to the Company (at the English price of pork), for the use of the garrison; and in supplying the other inhabitants: and the planters might feed

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themselves and families at home without purchasing and sending for every sort of meat from James's Valley. Moreover, if the island price were lowered, there would be a very considerable sale to the shipping.

What a vast field for improvement in the condition of the planters, and what an incitement to industry does this hold out, compared with their narrow views, in having hitherto no other object or vent for the produce of the lands than what may arise from the shipping that touch here!—When disappointments in their arrival or detention occur, it is not suprising there should be complaints of "no cash being in circulation." These would undoubtedly be removed, if industry and agriculture were extended; which are, in every country, the most efficacious means of promoting the prosperity of the people.

In respect to the goats, it would be very unreasonable to expect that any considerations of a selfish nature, or the mistaken prejudices of a few, should counteract what is obviously for the good of the whole. That the exercise of the right or privilege of the goat-ranges has ever been, and still continues, a most intolerable abuse, will not be denied. Those ranges were limited to certain spots: but what has been the result? The proprietors of goats never trouble their heads about where they browse, and as they are of course *never* looked after but on pounding days, they are seen daily to range every where; and thus a limited privilege, to a few persons, has absolutely given them the range of the whole island!

To attempt to confine them, as originally intended when that privilege was granted, would be an endless labour: and, without the most vigorous enforcement of this condition, the evils which have happened were naturally to be expected. Wherefore, the institution of goat-ranges must appear to every unbiassed person

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to have been injudicious; and by no means calculated to produce any advantage that could compensate, even in the smallest degree, the manifold evils and vexations that have resulted from it. It is indeed surprising that a privilege so extraordinary, so grossly abused, and so ruinous in its consequences, should have been quietly borne by the inhabitants at large for so many years.

By the measure of extermination all would benefit.—The owners of goats and sheep would not be losers—if they were to receive from the Company a fair and reasonable price for their goats and sheep. These might speedily be consumed by issuing them to the garrison, without any extra loss being incurred by the Company in thus giving rations of fresh instead of salt meat.

The owners might also be repaid the *bona fide* price they gave for the goat-ranges, which would indeed be the only charge to the Company attending the arrangement I have suggested; and if it were carried into effect, those ranges, and many other places, might be sown with the seeds of all sorts of indigenous and other trees; for where trees formerly grew, it may be presumed they would grow again. This was indeed proved, as already noticed, after the destruction of the sheep and goats in 1731.—Should this measure, therefore, be again carried into effect, and the improvements of planting and fencing carried on with spirit, there would soon be no want of fuel, nor any impediment to agriculture; and after a few years, the inhabitants might again have restored to them a privilege of cutting wood on the goat-ranges, similar to that which they enjoyed of cutting fuel from the Great-wood. Whatever trees are thus planted, should be for the benefit and use of all the inhabitants.

If the goats and sheep were removed, many valuable orchards and gardens might easily be established in those well watered ravines or vallies which, on account of their depredations, have

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hitherto been unproductive. Fruit trees of every sort, vines, sugar canes, coffee, and cotton, would all thrive luxuriantly in those warm and well sheltered situations. Fences would almost be unnecessary, since the steep declivities on either side, would sufficiently protect the plantations from the trespass of black cattle.

Although there were, according to the returns in December 1809, 1811 sheep and 2887 goats on the island, in all 4698, none have, for many years past, been brought to market; and the export to shipping has very much diminished, owing to the prices having risen about three-fold during the last twenty years. In 1789, 109 goats, and 201 sheep were sold to the ships: whereas, in 1809, the total numbers were only 6 goats and 22 sheep; and these last were imported from the Cape. What then is the use of maintaining such large flocks, since they neither contribute to the refreshment of ships, nor to the comforts of the community? A few individuals may indeed prefer them to hogs; and derive convenience from their mode of keeping them, because it is neither attended with labour nor expense. But whether this trifling advantage to a few, attended with an intolerable nuisance to the whole, should supersede the infinite and important benefits which would result to the island, to the Company, and even to the proprietors of goats and sheep, by their extermination, is a question which the preceding inquiry may possibly determine.

20th September, 1810.

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SECTION II.

Experiments in the Culture of Potatoes—Comparisons of Manures—extraordinary Power of Guana, or Sea-fowl Dung, as a Top-dressing—Hints to Proprietors of Islands and Rocks in Scotland.

In a place which has, for many years, been almost wholly dependent on foreign imports for the common necessaries of life, and where neither commerce nor manufacture finds employment for industry or exertion, there can be no duty more incumbent on persons entrusted with its management, than a due attention to those means that are the most likely to augment its internal resources.

From the earliest period of its establishment (in 1673) to the present time, the most positive orders to favour and encourage agriculture have been sent by the Honourable the Court of Directors. It is, therefore, in obedience to those repeated orders, that I have endeavoured to discover the capabilities of the soil, and the modes of cultivation the best suited to the circumstances of this island. I have accordingly, in the Abstract of the Laws and Ordinances, and in the papers relating to the goats, embraced every occasion that offered of stating the results, and of introducing my opinions. I have also, I trust, proved, that immense advantages would arise to the land-holders if they were to allot a certain selected portion of their pasture lands to the culture of corn and artificial grasses, to the planting of trees, and to the introduction of hedge-rows.

Those opinions being founded on a variety of experiments, and the results having been most carefully ascertained, under my own

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inspection, I can vouch for their accuracy. I feel a confidence, therefore, that whoever may hereafter make similar trials will not be disappointed. But I must here apprise experimenters, that a first crop, from land newly brought into cultivation, is generally much inferior to the succeeding ones.—I found an acre of land, which, upon breaking up, produced only 324 bushels of potatoes, yielded a succeeding crop, planted immediately after, of 522. I ascribe this improvement to the repeated stirring of the soil, by which the fertilizing influence of the rains and atmosphere were admitted. Upon these two crops no manure was used; and as potatoes are known to exhaust fertility, it might have been expected the second crop might have been less instead of greater. Hence, it seems probable, the deterioration of the soil does not take place until some time after the land is brought into cultivation.

Mr. Tull, an Oxfordshire gentleman, who published a Treatise on Husbandry, about forty years ago, speaking of the great advantages of frequently stirring and pulverising the soil, relates that a little farmer, having prepared his field for sowing, could not raise money to purchase the seed until he had lost the season; he therefore kept on ploughing, at proper intervals, until the next season arrived, when he compassed to plant his field. At harvest, his crop was so abundant, that its value was more than sufficient to pay the fee simple cost of his field. The effects, from frequent stirring of the soil might readily be determined, by comparing the produce of a square rod of ground, planted with potatoes after being stirred four or five times in as many months, with that of an adjoining space, of the same extent, planted at the time of breaking up.

On my arrival, in 1808, I was desirous of obtaining information upon the modes used here in the culture of potatoes:

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but I soon perceived, from the vague method of estimating the produce by the returns from the seed sown, without any account being taken of the quantity of land occupied by the crop, that no useful déductions could be drawn, nor any comparison made between the potatoe lands here and those in England.

I learnt, however, that two crops (or more) annually were obtained from the same land; and that these were had, in a continued succession, during a period of 12 or 14 years, without the application of any sort of manure. This, I confess, surprised me. I heard also of "self-sown crops," that is, of leaving in the ground, at the time of digging, a certain portion of the potatoes for a succeeding crop.

This unusual course of husbandry led me to infer that a much better mode might be adopted (which is indeed practised by some of the gentlemen-planters): and, in order to satisfy myself on this point, I resolved to commence a series of experiments, which should embrace the following essential points in the culture of potatoes; the proper depth of planting—the best sort of seed—the advantage of the row culture—and the improvement by manuring.

The returns of 10 or 15 bushels for one sown, were, in general, deemed good crops; but my experiments have proved that these are very inferior to what can be obtained under a different course of management.

Supposing 13 bushels to be the usual quantity of seed required to plant an acre, the returns above stated would be no more than 180, or 270 bushels per acre. According to the following table it will be seen, that by the new culture, and the aid of manure, the acreable produce of the potatoe lands may be augmented, upon an average, to nearly three times those quantities. What

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an advantage is this, in a place where the scanty means of labour are generally complained of!

It will be observed, by the table of experiments, that the greatest produce was at the rate of 648 bushels per acre. This was from No. 5, in the division manured with horse dung: but even a greater rate of produce was had from a portion of the unmanured acre, which yielded the 522 bushels before mentioned. I ascertained that 30 feet of the rows of this acre, twice repeated, and taken indiscriminately, produced of fine large potatoes 52 pounds: or, as will be hereafter explained, at the rate of 674 bushels per acre.

This was also greatly surpassed by an experiment upon one kidney potatoe. It was cut in eleven pieces, which were planted in a single row, at one foot asunder, on the 5th of April, 1810, upon ground very highly manured with hog's dung. Nine of the sets only came up, and these occupied one row that measured nine feet. On the 8th of August, 1810, when the haulm had fallen, the potatoes were taken up, and weighed 21½ pounds averdupois; which is in the proportion of 929 bushels per acre.

These well ascertained facts will, I hope, draw the attention of the planter to the row culture; and to establishing farm-yards, and hoggeries, for the purpose of manuring their lands. They might then make experiments for themselves, which I am confident would soon induce them to change their present modes of husbandry; because these are evidently far less profitable, and must, in the course of time, infallibly exhaust, and ruin their plantations.

The spot selected for experiments is in the front garden at Plantation-house. It was exactly a square chain, or the tenth part of an acre; and was, at first, divided into four equal parts

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for the manures, according to the black lines in the following diagram:

	Class 1.				*Class* 2.				*Class* 3.				*Class* 4.				
	Seed the size of Walnuts planted whole.				Large seed cut in pieces.				Eyes, middle sized Potatoes.				Small Potatoes planted whole.				
Depths	12	9	6	3	12	9	6	3	12	9	6	3	12	9	6	3	of planting
	Horse Dung Litter, 35 *loads per acre.*																
No. of the	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	experiments
	Hog's Dung Litter, 35 *loads per acre.*																
No. of the	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	experiments
	Guana; or, Sea-fowl Dung, 35 *bushels per acre.*																
No. of the	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	experiments
	No Manure.																
No. of the	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	experiments

66 feet.

66 feet.

The figures 12. 9. 6. 3. represent the depths of planting in inches, and the positions of each two rows which traversed the manured and unmanured parts. The numbers 1 to 64 shew the situations of the experiments. The three narrow paths which separated the manured divisions reduced the cultivated space from $16\frac{1}{2}$ to 15 feet: each experiment upon the two rows consisted therefore of 15 feet in length, or of 30 feet of rows; which, as will be hereafter explained, is the 726th part of an acre.

The manures were evenly spread over the beds in the orders and quantities specified in the diagram; they were then trenched one spit deep into the soil. The transverse lines mark the spaces for each class of seed, and by crossing the manure divisions they formed 16 squares, containing each four distinct experiments; so that the total number was 64. The soil was rather

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stiff, being composed of blackish mould intermixed with friable fat clay.

The whole being thus prepared, the seeds were dibbled in at their respective depths, on the 9th of August, 1809, and the produce was taken up on the 30th of November, that is, 113 days after planting.

The following table of the results, exhibits the produce of each experiment, or 30 feet of rows, in pounds; the weight of the six largest potatoes; and the computed acreable produce in pounds, and in bushels.

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TABLE *of the Results of the Experiments, exhibiting the number of pounds that each* 30 *feet of rows yielded, the weight of the six largest Potatoes from each experiment, the computed acreable produce, in pounds and bushels, and the total quantities produced from each sort of seed, at the several depths, throughout the manured and unmanured parts, in the extent of* 120 *feet of rows.*

NOTE.—30 *feet of rows are the 726th, and* 120 *feet the* 181.5 *of an acre.*

Class 1.—Seed the size of Walnuts planted whole.

Twelve Inches deep.

Number.	MANURES.	Produce of 30 feet of rows.	Weight of the six largest.	Produce per acre in lbs.	Produce per acre in bush. 56lbs.	REMARKS.
		lbs.	lbs. oz.			
1	Horse dung	38	2 8	27588	492	
17	Hog's ditto	31½	1 14	22869	408	
33	Sea-fowl ditto	38½	2 4	27951	499	
49	None -	26	1 8	18876	337	
	Total	134				lbs. 134 × 181.5 equal to 24321 lbs. per acre.
		Nine Inches deep.				
2	Horse dung	35½	1 8	25773	460	
18	Hog's ditto	33	1 12	23958	427	
34	Sea-fowl ditto	36	2 2	26136	466	
50	None -	29	1 6	21054	375	very stiff black clay soil.
	Total	133½				lbs. 133½ × 181.5 equal to 24239lbs. per acre.
		Six Inches deep.				
3	Horse dung	45	2 8	32670	583	
19	Hog's ditto	34½	1 2	25347	447	
35	Sea-fowl ditto	42	2 2	30492	544	
51	None	30½	2 2	22143	395	very stiff black clay.
	Total	152				lbs. 152 × 181.5 equal to 27588lbs. per acre.
		Three Inches deep.				
4	Horse dung	37	2 0	26862	479	
20	Hog's ditto	32	2 4	23232	414	
36	Sea-fowl ditto	41	1 14	29766	531	
52	None	24	2 2	17424	311	
	Total	134				lbs. 134 × 181.5 equal to 24321 lbs. per acre.

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Class 2.—Large Seed cut in pieces.

Twelve Inches deep.

Number.	MANURES.	Produce of 30 feet of rows.	Weight of the six largest.	Produce per acre in lbs.	Produce per acre in bush. 56lbs.	REMARKS.
		lbs.	lb. oz.			
5	Horse dung	50	3 2	36300	648	very fine.
21	Hog's ditto	28½	2 8	20691	369	
37	Sea-fowl ditto	39	2 2	28314	505	
53	None -	22	2 2	15972	285	
	Total	139½				lbs. 139½ × 181.5 equal to 25319lbs. per acre.
			Nine Inches deep.			
6	Horse dung	45½	3 0	33033	589	
22	Hog's ditto	33½	2 6	24321	434	
38	Sea-fowl ditto	43	3 0	31218	557	
54	None -	29½	1 6	21417	382	
	Total	151½				lbs. 151½ × 181.5 equal to 27497lbs. per acre.
			Six Inches deep.			
7	Horse dung	41½	4 2	29766	531	
23	Hog's ditto	36½	2 2	26136	466	
39	Sea-fowl ditto	45½	2 10	33033	589	
55	None -	31½	1 14	22869	408	
	Total	154				lbs. 154 × 181.5 equal to 27951 lbs. per acre.
			Three Inches deep.			
8	Horse dung	39½	3 0	28677	511	
24	Hog's ditto	29	1 12	21054	375	
40	Sea-fowl ditto	43	3 12	31218	557	
56	None -	32	2 14	23232	414	
	Total	143½				lbs. 143½ × 181.5 equal to 26045lbs. per acre.

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Class 3.—Eyes of middle-sized Potatoes scooped out.

Twelve Inches deep.

Number.	MANURES.	Produce of 90 feet of rows.	Weight of the six largest	Produce per acre in lbs.	Produce per acre in bush. 56lbs.	REMARKS.
		lbs.	lbs. oz.			
9	Horse dung	37	3 4	26862	479	
25	Hog's ditto	23	1 10	16698	298	
41	Sea-fowl ditto	29½	3 10	21417	382	
57	None	12¼	2 2	9256	165	
	Total	102¾				lbs. 102¾ × 181.5 equal to 18558lbs. per acre.
		Nine Inches deep.				
10	Horse dung	37	3 4	26862	479	
26	Hog's ditto	23	3 2	16698	298	
42	Sea-fowl ditto	29	2 12	21054	375	
58	None	16¼	2 6	11797	210	
	Total	105¼				lbs. 105¼ × 181.5 equal to 19102lbs. per acre.
		Six Inches deep.				
11	Horse dung	43½	3 10	31581	563	best sort
27	Hog's ditto	37½	3 14	27225	485	
43	Sea-fowl ditto	44½	3 8	32307	576	
59	None	26	2 0	18876	337	
	Total	151¾				lbs. 151½ × 181.5 equal to 27497lbs. per acre.
		Three Inches deep.				
12	Horse dung	29½	4 10	21417	382	
28	Hog's ditto	37½	2 14	27225	485	numerous small excrescences on the haulm.
44	Sea-fowl ditto	35	2 14	25410	453	
60	None	26¼	2 10	19239	343	
	Total	128½				lbs. 128½ × 181.5 equal to 23323lbs. per acre.

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Class 4.—Small Potatoes planted whole.

Twelve Inches deep.

Number.	MANURES.	Produce of 30 feet of rows.	Weight of the six largest	Produce per acre in lbs.	Produce per acre in bush. 56lbs.	REMARKS.
		lbs.	lbs. oz			
13	Horse dung	31	1 12	22506	401	
29	Hog's ditto	38½	1 6	27951	499	
45	Sea-fowl ditto	38	1 0	27588	492	
61	None	28½	1 12	20691	369	
	Total	136				lbs. 136 × 181.5 equal to 24684lbs. per acre.
			Nine Inches deep.			
14	Horse dung	39½	1 8	28677	512	
30	Hog's ditto	40½	1 12	29403	525	
46	Sea-fowl ditto	43	2 0	31218	557	
62	None	34	1 12	24684	440	
	Total	157				lbs. 157 × 181.6 equal to 28495lbs. per acre.
			Six Inches deep.			
15	Horse dung	45	1 12	32670	583	
31	Hog's ditto	42	1 10	30492	544	
47	Sea-fowl ditto	48½	2 0	35211	628	nearly a heaped bushel remarkably fine potatoes.
63	None	44	2 6	31944	570	
	Total	179½				lbs. 179½ × 181.5 equal to 32579lbs. per acre.
			Three Inches deep.			
16	Horse dung	32	1 12	23232	414	
32	Hog's ditto	34	2 2	24684	440	
48	Sea-fowl ditto	43	2 0	31218	557	
64	None	34	2 0	24684	440	
	Total	143				lbs. 143 × 181.5 equal to 25954lbs. per acre.

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The following is an abstract from the preceding table, and is a comparative view of the effects of the several classes of seed, shewing the total produce in pounds.

	Pounds.
Class 1. Seed the size of walnuts planted whole, yielded	553½
2. Large seed cut in pieces - - -	588½
3. Eyes of middle sized potatoes - -	487½
4. Small potatoes planted whole - -	615½
Total pounds -	2245

These results will be pleasing to the planters, since they have clearly ascertained that small potatoes planted whole, which would not fetch so good a price in the market as the largest sort, are the best for seed.

The following is a comparative view of the effects of different depths of planting, shewing the total produce in pounds.

	Pounds.
1st. Six inches deep, yielded - -	637
2d. Three ditto, ditto - - -	549
3d. Nine ditto, ditto - - - -	547¼
4th. Twelve ditto, ditto - - -	511¾
Total pounds -	2245

By these results, it is proved, that planting at the depth of six inches on stiffish land is the most productive: but if the soil be of a lighter and freer sort, it is probable nine inches, or more, would yield best, because the moisture necessary for vegetation lays deeper in that sort than in a more retentive soil.

The following is a comparative view of the effects of the manures: shewing the total produce in pounds.

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	Pounds.
1st. The guana:* or, sea-fowl dung at 35 bushels per acre, yielded - -	639
2d. Horse dung litter at 35 cart loads or 420 bushels per acre, yielded - - -	626
3d. Hog's dung litter, at 35 cart loads, or 420 bushels per acre, yielded - - - -	534
4th. No manure - - - -	446
Total pounds -	2245

* The guana or sea-fowl dung, which is found in considerable quantities upon Egg Island, was first recommended to my notice by the Right Honourable Sir Joseph Banks, President of the Royal Society. "It furnishes," says he, "the loading of an immense "number of vessels that are constantly employed in bringing it from small islands, to the "main land on the western coast of South America, where it is sold and distributed for "the purpose of manure; which it answers, in a degree, infinitely superior to any other "article we have the knowledge of.—A handful is considered as sufficient for several "square yards of land, the produce of which is exuberant, in consequence of the force of "this application."

The accuracy of this valuable communication has been most amply confirmed by my experiments in the culture of potatoes, as well as upon grass lands. Thirty-five bushels of the guana, or three cart loads per acre, appear to me, equivalent in effect, to seventy loads of good rot-dung. I should imagine that abundance of this most valuable manure might be had from many of the rocks and islands on the coasts of Scotland.

The effect of the guana upon grass land is comparatively greater than in the potatoe experiments.—From what cause this proceeds it may be difficult to explain: but as Dr. Priestley found, by experiment, that vegetables throve best when they were made to grow in air made putrid by the decompositon of animal and vegetable substances, it may be inferred that the very strong effluvia which issues from the sea-fowl dung, or guana, together with its being readily washed among the roots of vegetables by the first falls of rain, are circumstances that may possibly render its effects, as a top dressing, greatly superior to those it produces when it is mixed with the soil. By this mixture its powers may be weakened, and a great portion of effluvia, which by some is supposed the proper food of plants, being retained underground, cannot escape and unite with the atmosphere.

On the 29th of July, 1808, I marked out a space, on the lawn in front of Plantation-

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These results decisively prove the great advantage of manuring the lands, which would evidently repay the additional expense,

h use, which measured one rod in breadth, and twelve rods in length. This was divided into twelve equal parts, or square rods, and numbered progressively from 1 to 12. The guana was reduced to a powder, and sifted; and upon Number 1 a quart of this powder was evenly strewed by the hand; this is at the rate of five Winchester bushels per acre; because 160 square rods, or an acre, would have required that number of quarts, or exactly five bushels. In the same manner Number 2 had two quarts, Number 3 three quarts, and so on to Number 12, which had twelve quarts, or at the rate of 60 bushels per acre.

From the 29th of July there were, daily, drizzling rains until the 5th of August, when the effect of this invaluable manure began to appear. On the following day the whole extent of the 12 rods became highly verdant, and exhibited such a contrast to the unmanured part of the lawn, that it had the appearance of having been newly turfed with a finer kind of sod. The effect gradually increased; and in the first week of October, that is, in little more than two months, the higher numbers, from 6 to 12, (having from 30 to 60 bushels per acre), excited the surprise of every person who saw them, being covered with the most exuberant grass that can be imagined, and having more the resemblance of a crop of young wheat, very thickly sown, than of any grass I ever beheld.

This is the more remarkable, as at that time, the copious rains which fell in August, and the spring season had made no visible effect on the adjoining part of the lawn.

It was from a frequent and careful inspection of the above experiments that I have estimated 35 bushels of guana per acre to be equivalent in effect, upon grass lands, to 70 loads of good rot-dung.

I have been informed that guana is sold at Lima, and at other towns on the coast of Peru, for a dollar a bag, of 50 pounds weight, and that it is much in use there for manuring fruit trees and gardens.

It is certainly one of the most powerful of manures; and therefore it is necessary to be cautious in using it. I have observed, when too much is laid upon grass, that it burns and destroys it.—I would therefore recommend, to those who may try it on fruit trees, to begin with not more than three quarters of a pint to each tree, and to trench it, about a foot deep, all round the roots. If the first application be found insufficient, a second, or third, may be given at intervals of two or three months; or, a better mode, perhaps, of determining the quantity of guana proper for each fruit tree, would be to select about a dozen trees of the same kind and size, and to vary the quantities, by an easy progression, from three quarters of a pint, to one or two quarts, or more, to each tree.

A. B.

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and would maintain the potatoe grounds in good heart. These might, no doubt, be further improved by rotations of corn and green crops, which would prevent those disappointments that arise after perpetual croppings of potatoes for 12 or 14 years without manure. By such a practice, labour becomes useless, its expenses are thrown away; and the lands, originally productive, are, in the end, completely exhausted. This is a fact well known to the planters.

It has already been mentioned that the greatest produce was from experiment No. 5; which was large seed cut in pieces, planted 12 inches deep, and manured with horse dung litter. Thirty feet of the rows yielded 50 pounds of very fine potatoes, which is at the rate of 648 bushels per acre.

To those who are unaccustomed to such calculations, it may be proper to explain in what manner the results in the Table are computed, from the length of 30 feet of rows.

An English statute acre consists of 10 square chains. This may be more readily comprehended by imagining a space one chain in breadth, and ten in length. As a chain measures 66 feet, it is evident an acre of the above form will be 66 feet broad, and 660 feet long—and consequently the contents of an acre are 43560 square feet.

If this acre be planted in rows, 2 feet asunder, there may be placed 33 rows in its breadth—and this number of rows, multiplied by 660 feet, will give 21780 feet for the total length of the rows. Then, if this sum be divided by 30 feet, it will be found that this length of rows is exactly the 726th part of an acre—consequently, the produce, in pounds, of any one of my experiments, multiplied by 726, will give the acreable produce in pounds. To find this produce in bushels, divide by 56 pounds, the weight of a St. Helena bushel.

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For example, experiment No. 5, yielded 50 pounds; multiplying this by 726, gives 36300 pounds, and dividing by 56, gives 648 bushels, as entered in the Table.

I was, however, accidentally led into this mode of computation —because, as I have already stated, the rows had been reduced from 16½ to 15 feet. The readiest way, of determining the acreable produce of a crop of potatoes, or of corn—is first to ascertain the quantity yielded from one rod (that is 16½ feet square), measured upon any part of the field, and then to multiply that quantity by 160 (which is the number of square rods in an acre), the product will be the computed quantity per acre.

January 12th, 1811.

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SECTION III.

Easy Mode of Thrashing, Cleaning, and Preserving all Sorts of Grain, as practised in India, and various Parts of Europe; recommended in the Infancy of St. Helena Farming.

THROUGHOUT India, the manner of reaping and preserving corn, is nearly the same. It is cut down within four inches of the ground; and when dried in the sun, it is, without binding it in sheaves, put in small stacks about ten or twelve feet high. The stalks are placed outward, and the ears inward. After remaining in the stacks a week or ten days, it is spread evenly on a thrashing-floor, made hard, level, and smooth; and coated with a mixture of cow-dung, clay, and water. The grain is then trodden, by driving a number of cattle over it. When the thrashing is completed, the straw is separated from the grain and chaff; and these being projected in the air, by means of wooden shovels, the corn becomes perfectly winnowed, by this simple process, which is performed entirely in the open field.

The natives of India have various ways of preserving grain. Some put it in large earthen jars, and keep it in their houses; others use pits, about fifteen or twenty feet deep. These are excavated, in a dry and compact soil, by digging a narrow shaft, two or three feet in diameter, which is gradually widened towards the bottom, and forms a spacious cave under ground, leaving only a small opening at top. Through this opening, after the cave has been lined with straw rope, the grain is deposited; and the opening is then closed by a few sticks or boards, over which soil is laid, and made level with the surface of the field. These

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under-ground granaries exclude all air and moisture, and grain is preserved in them for several years.—I think it is probable that potatoes on this island might be preserved in the same manner for several months.

In some parts of India, small store-rooms are erected, which are strongly floored with planks, to keep out the *bandicoots*, a species of destructive rat, much larger than those at St. Helena. In the store-rooms, no opening is left for air: but there are small doors, one above another, for the convenience of taking out the grain as it is wanted.

In some of the northern countries of Europe, the flail is not used in thrashing. A large circle is cleared, and levelled, upon an open and elevated place. After the stones, or gravel, have been carefully removed, water is sprinkled—and the space is covered with short straw. A post is then fixed in the centre of the circle, and as soon as the soil is somewhat dry, it is trodden by horses, fastened by means of a rope, to the central post.—As the horses are driven round, the rope gradually shortens; and the animals, when they have approached the centre, are made to move in a contrary direction. After repeatedly pursuing this alternate career, towards and from the centre, the floor is at length prepared. The sheaves are now untied, and disposed in successive circles from the post to the circumference, in order to be trodden. The thrashing is performed exactly in the same manner as in preparing the floor, by driving two or three horses round the post until all the ears are separated. The straw, which is reduced to very short pieces, is separated, and used as fodder during the winter; and the grain and chaff are then collected into a heap, and the winnowing performed in the same manner as is practised in India.

It is remarkable that the winnowing of corn in Egypt and

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in several parts of the Mediterranean, are the same as above-mentioned. The mode of thrashing in Egypt is, however, different; for small carts are there made use of, which, by being driven repeatedly over the corn, separates the grain from the straw in a manner equally effectual as the other two modes I have described.

24th January, 1811.

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SECTION IV.

Experiments illustrating the beneficial Effect of frequently stirring the Soil.

MR. Curwen's discoveries and improvements, in the culture of vegetables, are curious and interesting; and are deserving the attention of all who are engaged in this species of husbandry. They seem to me peculiarly applicable to the circumstances of this island; they point out modes of rendering lands more productive, without any risk of being exhausted, even by continual cropping for a series of years. I conceive, therefore, that the whole of Mr. Curwen's valuable communication, on those important subjects, must be highly gratifying and acceptable to many of your readers.*

It is my intention to follow Mr. Curwen in some of his experiments. I feel a confidence of success, even from the present state of a small comparative experiment, which I have now in process.—It was begun about four months ago, with a view of ascertaining the effect of frequently stirring the soil, and exposing it to the influence of the rains and atmosphere. I selected, for this purpose, a very unpromising spot of land, the soil a pale brown friable clay, which, in some parts, was bare, and in others producing nothing but the coarsest sort of tufted grass. The space for the experiments (measuring two rods in length and one in breadth) was divided into two equal parts. Number 1, was broken up on the 11th of December last, by trenching with the

* Mr. Curwen's communication to the Society of Arts, dated 9th June, 1808, was printed in the St. Helena Register, for the information of the landholders.

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spade to the depth of 10 or 12 inches. From that day until the time of dibbling in the seed, on the 23d of February, it had been, at equal intervals, five times stirred or turned. One-half of Number 1 was then dibbled with potatoes, and the other with barley; and, at the same time, the adjoining square rod, Number 2, was broken up, and dibbled, in every respect, in the same manner.

It is deserving remark, that the soil of Number 1, by frequent stirring, had become, and still continues, of a much darker hue than Number 2; and the potatoes and barley upon the former are infinitely superior to those on the latter; in so much, that the tufts of young barley are now, at least, five or six times more bulky than those upon Number 2.

For the information of those engaged in cultivation, I communicate these facts; because they are clearly decisive of the advantages from repeatedly stirring the soil. At a future period, I may give the result of the above experiments; in the mean time, I can assert with confidence, from the experience I have already had, that the cheapest and best mode of bringing old grass land into cultivation, is to pare off the turf to the depth of about two inches, and, when dry, to burn it; and immediately after to spread the ashes over the surface. The first ploughing should then be given, but not too deep; by this the labour of the cattle will be lessened, and the slags, or clods, will be smaller. The two or three after ploughings should go gradually deeper. Care should be taken, by harrowing, to clear the land entirely of roots, and of every sort of vegetable substance. If these operations are performed at proper seasons, so as to be completed just before the setting in of the rains either in January or July, that destructive insect the grub may be starved, and the land brought into the very highest state of preparation for receiving the seed. I will venture to say,

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if any one will but try the above process of cultivation, even upon a small scale, with the spade, and common garden rake, he will not be disappointed; and will find just reason to infer, that it is very possible to obtain abundant crops of vegetables, or corn, from many parts of this island, that are, in their present state, totally desolate and barren.

22d April, 1811.

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SECTION V.

Feeding Chickens—an Exposition of the unreasonable and exorbitant Prices of Poultry at St. Helena, in 1811.

"It is stated by Mr. Jackson, in the sixth volume of the Commercial, Agricultural, and Manufacturer's Magazine, that he has found that three pounds of meal, flour, or grain, of such a sort as does not cost more than one penny a pound, or to the farmer and cottager not even so much, with water, and what other fare the little creature can find for itself, will feed and fatten a chicken sufficiently from the time of its bursting the shell, until that of its being of a growth, and in a condition, suitable for its being carried to market. And that the allowance of another penny is sufficient for the attention and labour which its rearing requires, The prime cost of the egg may be one halfpenny. Thus he conceives that even in the vicinity of any great town, a chicken that shall bring ninepence, or rather one shilling, in the market, and is, in comparison with other things, worth as much for the use of your own table, whether you be a rich or poor man, may be produced and reared at the expense of fourpence halfpenny."

The above is an Extract from Mr. Dickson's Complete Body of Agriculture, page 1209, and may be deserving the attention of those who are in the habits of rearing poultry in this island.—It will also serve to shew that 15 to 20 shillings for a middle sized fowl, and 25 shillings for a duck, where grain is about twopence per pound, must be a pretty profitable trade.

27th June, 1811.

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SECTION VI.

On Planting Trees—Growth of Pineasters—remarkable Change in the Quality of Fir Timber in St. Helena—extensive Plantations of Pineasters recommended—Mimosa Myrtifolia (*or Botany Bay Willow*), *its rapid Growth—yields innumerable Pods, containing a sort of Pulse fit for feeding Poultry—its Culture recommended.*

"By viewing nature, nature's handmaid, art,
Makes mighty things from small beginnings grow." DRYDEN.

THERE are no trees that succeed so well on this island as the pineaster and a mimosa, which is usually called the Botany Bay willow. They grow on the poorest lands, withstand the south-east wind, and thrive in the most exposed situations.

Most of the pineasters at Plantation-house are from seed, brought here by Mr. Henry Porteous, and sown on the 1st of July, 1787. I have lately measured the girt of several of the largest trees; one is 5 feet and 7 inches; others are from 5 to 3 feet, and even less, differing in size according to the soil in which they are planted. These girts were taken at 4 feet above the ground.

One of those trees was blown down in February last. It has since been used for various purposes. The first 7 feet above ground squared to 13 inches; the whole of the stem measured 146 superficial feet, and the large branches contained 47; making the total from one single tree, 193 feet superficial. The smaller branches yielded a considerable quantity of fuel.

The timber is of a very superior quality: it differs materially from either the Memel, or the American fir, being of a closer

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grain, beautifully veined, and resembling in some degree, a pale mahogany.

It appears, by the printed laws and ordinances, that the importance of planting trees has been often, during the last century, strongly pressed upon the landholders by the Court of Directors: but leaving what is past, and looking forward to the next five and twenty years, it may be useful to take a view of the invaluable benefits which might be conferred on this denuded island, by a due attention to the orders of the Company; and above all by forming plantations of pineasters, particularly on the leeward sides of the mountains, and other parts in the interior of the island, where, on account of a greater moisture, and a cooler atmosphere, it may be expected they would produce even larger timber than in the vicinity of Plantation-house.

As Governor Roberts's directions on the 31st May, 1709, (which require the distance from one tree to another not to exceed seven feet, or at the rate of 888 trees to an acre) are different from the practice of the present time: it may be proper in this place, to say a few words upon the number of trees that should be planted on an acre.

In the Transactions of the Society of Arts, Vol. XXVI. there is an account of Dr. A. Bain's plantations in Dorsetshire, of 338,199 forest trees, upon 250 acres of poor land. He allotted 2000 to each acre. His plantations are of a mixed sort, consisting of 289,555 Scotch firs; 4362 oaks; 12,290 larch; Spanish chestnut 5647; spruce 3450; ash 11,050; pineaster 1900; sycamore 4050; birch 1700; and hazel 4195. The Scotch firs and pineasters succeed far better than any of the other trees.

The same number of trees to an acre has been also allotted in the Duke of Portland's plantations in England; where trees of various sizes are placed in an irregular manner. And Mr.

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Nicol remarks, in his Treatise on Planting, that " he who plants " too thin, with the idea of saving trouble in thinning, deviates " as widely from the right path, as he who thins none at all."

Relying, therefore, upon established practice, and such good authority it seems advisable to plant trees at the rate of 2000 to an acre; which is something less than five feet asunder. The thinning of the plantations would, in a few years, well repay the trouble, by the ample supplies of fuel they would produce; and by leaving the choicest trees to attain their full growth, they would, in the course of 20 or 25 years, be of very great value in affording excellent timber upon the farms, either for sale, or for the purpose of erecting buildings.

Let us now suppose the possibility of forming plantations of pineasters, upon 600 acres of the St. Helena mountains; and that 2000 trees are planted upon each acre, and of which 500 timber trees shall be produced, (four or five and twenty years hence) from each acre, or in all 300,000 timber trees.

Suppose also that the average superficial feet in each of those timber trees, to be no more than 150 feet, which, from 300,000 trees, would be 45,000,000 superficial feet; and rated at 4d. (the recent price of imported American timber) would be, in value, seven hundred and fifty thousand pounds. This is at the rate of no more than 50 shillings for each timber tree, exclusive of vast quantities of fuel from the thinning of the plantations, and from the lopping of the timber trees at the time they are cut down.

In regard to the Mimosa Myrtifolia, or Botany-bay willow, there are at Plantation-house several young trees that were raised from seed sown on the 20th January, 1810, and afterwards transplanted. The largest is 9 or 10 feet high, a beautiful shrub now in blossom, and covering a space of about 8 feet in diameter. This sort of Mimosa attains the height of 20 to 25 feet.

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It produces annually an immense number of long pods full of seed; so that it might not only be propagated to any extent, but as the seed is greedily devoured by rats, it may be presumed that its general culture would be highly beneficial, both in speedily raising fuel, as in contributing to the support of poultry, hogs, and other live stock. I have tried it with poultry who seem to relish it equally as other grain.

I hope that these hints will be duly considered, and that they may tend to excite a spirit of emulation in planting trees, which no doubt might be greatly promoted if premiums were offered by the Court of Directors, to every landholder, who shall have growing, in a thriving state, 20 or 25,000 trees.

22d July, 1811.

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SECTION VII.

On Potatoes—two Crops in the Year—extensive Culture recommended—solid Nourishment of, compared with Flour—Culture of Corn recommended as a green or dry Fodder for Cattle—former heavy Losses in Cattle ascribed to improvident management—Notices of dry Seasons, and Losses in Cattle, from the year 1724 *to* 1792.—*Seasons of Drought produced by the Operation of some general Cause—severe Drought at St. Helena in* 1791-2 *pervaded the Peninsula of India; and felt at Montserrat in the West Indies.*

"LEEK to the Welsh, to Dutchmen BUTTER's dear,
Of Irish swains POTATOE is the cheer." GAY.

DOCTOR ADAM SMITH, in his *Wealth of Nations*, observes, that, "the chairmen, porters, and coal-heavers in London, and those "unfortunate women who live by prostitution, the strongest "men, and the most beautiful women perhaps in the British "dominions, are said to be, the greater part of them, from the "lowest rank of people in Ireland, who are generally fed with "*Potatoes*. No food can afford a more decisive proof of its nou-"rishing quality, or of its being peculiarly suitable, to the health "of the human constitution."

If this able writer had visited St. Helena, or had been aware of the practice of raising *two crops* a year from the same land, or of producing 36,000 pounds of *Potatoes* annually from an acre, without manure, which Colonel Broughton has found to be the average of his crops at Long Wood, which is by no means the richest land here, it would have afforded him even a much greater contrast, and a more forcible comparison than he has drawn

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between the produce of an acre of *Potatoes* and an acre of *Wheat* in England. The former he rates at only twelve thousand pounds weight; the latter at two thousand, and allowing "half the "weight of *Potatoes*, to go to water, (a very large allowance)," he infers that "one acre of *Potatoes* producing 6000 weight of "solid nourishment, is equal to three times the quantity pro- "duced from an acre of *Wheat*."

It is evident therefore, that the same train of argument applied to this island, would make the annual produce of one acre of *Potatoes*, in solid nourishment, equal to *nine* acres of *Wheat* in England.

From the peculiar advantages which St. Helena enjoys in the extraordinary produce, as well as in the excellent quality of this invaluable root, it is evident that the extensive culture of *Potatoes*, is deserving the utmost attention, not merely as a food for man but for cattle and live stock of all kinds. The imports of flour, rice and paddy, and of salted meat, might thus be diminished, the island might easily be made to abound with every necessary of life, which is assuredly the best mode of depressing the present exorbitant prices; and the diminution of those wants which are obtained from other countries, would no doubt, have the effect of retaining, amongst the cultivators of the soil, a very great proportion of the sums that are annually paid for foreign supplies.

The annual consumption of flour is about 1600 barrels, which would cost in England, including the barrels, according to the invoice per Walmer Castle in 1807, £8674. If freight and charges be added at £5. per ton, and rating six barrels to a ton, this would be 266 tons, or £1330, making the total cost of 1600 barrels of flour, when landed here, £10,004.

Now from what has been said, and following Doctor Adam Smith's deductions, I will proceed to shew that an equal quantity

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of the "solid nourishment" contained in 1600 barrels of flour might be obtained in *Potatoes*, from thirty-three acres of this island, and admitting the rent, and the labour in cultivating the *two* crops annually, at even 30 pounds per acre, which is a very large sum, and particularly when the plough management is introduced, that for nine hundred and ninety pounds sterling, there might be raised of wholesome nourishing food, a substitute or equivalent, for what costs when brought to this island, more than ten thousand pounds sterling! Sixteen hundred casks of flour, at 370 pounds each, contain 592,000 pounds, and thirty-three acres of *Potatoes* at 36,000 pounds per annum, would be 1,188,000, the half of which being 594,000 pounds, is "the solid nourishment," according to Doctor Adam Smith: which is even *more* than that contained in the above number of casks of flour.

Mr. Parmentier found, from a number of experiments, that good bread might be made from equal quantities of flour and potatoes. No doubt, two thirds of flour to one third of potatoes would be better: and some of this sort made here by a neighbour who well understands the comforts and good things of this life, was superior to any bread I ever tasted on this island. I would recommend a trial to the St. Helena bakers; they would find by this mixture that the bread has a fresher taste, and that it has the property of keeping better than that which is made of the flour imported from England: besides, by making flour go farther, they could afford to dispose of bread at a cheaper rate than that made wholly from flour.

I trust that these remarks will stimulate our landholders to their own interests, and that we shall soon have at least an hundred acres of potatoes added to the present cultivation. By this I do not mean to exclude the use of flour, but I am fully persuaded, that the advantage and convenience arising even from this addition in

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feeding man and livestock, would soon lead to a more extensive culture. In a year or two the inhabitants would thus become far less dependent on foreign imports; and the potatoe culture upon an enlarged scale, would also enable the landholders to give a portion to their cattle, at those times when they are much reduced by the impoverished state of the pastures; by this the lives of many might be saved during an unfavourable season. But the more effectually to guard against the fatal consequences that may justly be apprehended from a dry season, under the present management of cattle, I cannot too strongly recommend the expediency of alternate crops of potatoes and corn: the latter might be raised as at the Cape of Good Hope, either as a dry or green fodder; and of which there might always be a certain supply particularly when the rains have only partially failed: this was most clearly proved in February and November, 1810, as will appear from what is stated in page 28* of the printed Laws and Ordinances, and in pages 51† and 76‡ of the Goat papers.

Further advantages would result from the alternate crops of potatoes and corn, since they would preserve the lands in good heart; and if some attention were paid to manuring, it would prevent them being exhausted, and becoming unprofitable, which they often have been by continually repeating the potatoe crops. It is, moreover, the opinion of eminent agriculturists

* February 28th, 1810. "The WHEAT sown on the 9th of November is now in full "ear; the grass at present is much burnt up. Fodder of WHEAT, BARLEY, or OATS "would be very serviceable."

† "The GUINEA GRASS is likely to do wonders here: some looked green and beau- "tiful during some very dry weather, which burnt up all the GRASS around it."

‡ "On the 29th of November 1810, it was ascertained, that one acre of GREEN OATS, "yielded at this season of the year MORE nourishment for Cattle, than any ONE "HUNDRED acres of the Long Wood pastures."

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that such a rotation would, in a great measure, secure potatoes against the ravages of the caterpillar.

What eminent advantages does the whole of this easy system of management hold out! I am firmly resolved to pursue it; for I have often seriously reflected on the great losses that have been sustained here by the planters. I have endeavoured to discover the causes, which I cannot but ascribe, almost entirely, to improvident management. No care whatever is taken to guard against evils similar to what have frequently visited this remote spot on the globe. In 1738 the planters lost 555 head of cattle, and the Company 132. The total number that perished at that time, from the extreme dryness of the weather, was 687. This is a dreadful warning. What a blow would such a season give to the landholders of the present day! For there is absolutely not the smallest precaution taken to avert it. I cannot behold this picture without apprehension; for the value of the number of cattle that died in 1738, (and a far greater number in 1791 and 1792) at the present market price, may be fairly rated at 6 to 8000 pounds, sterling.

To excite a serious attention in the minds of the landholders, who have almost the whole of their property in cattle, and more strongly to impress them with the dreadful consequences of trusting wholly to pasture lands, and in the hope also they will pay some attention to the facts and hints I now set before them, I shall conclude these remarks with a brief statement of every notice I can find on record, that relates to the visitations of unfavourable seasons, and to the calamities which have been experienced by preceding generations.

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Notices regarding bad Seasons and Losses in Cattle, extracted from the Consultations, and from Letters from the Court of Directors.

In the year 1724, February 12.—Bad seasons for 4 or 5 years past: in dread of a famine.

1738, June 13.—Losses sustained in cattle, by the late dryness in the weather.

	Cattle.
Loss to the inhabitants - -	555
Ditto Company - - -	132
Total	687

1739, May 4th.—Rainy seasons had failed for the last 4 or 5 years.

1747, March 9th.—Rains failed last season.

April 11.—Unusual drought for several months past.

May 26.—On account of the grass lands being burnt up by the continuation of dry weather, cattle were fed, during six weeks with plantain trees.

1748, May 10th.—Yams so scarce, that only 32 soldiers can be supplied weekly.

1752, August 3.—A failure of rain for some time past.

February 22.—Heavy rains fell on the 20th instant

1759, December 7th.—For want of rain, the island and cattle in bad condition. The Court of Directors recommend promoting the increase of stock of all kinds.

1772, January 8.—Long continuance of dry weather occasioned great diminution in the number of cattle.

1774, December 23.—The island restored to a flourishing state.

1779, May 17.—The island in a distressed situation from the present drought—and from the loss and poverty of cattle.

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July 19.—Great mortality among the cattle.

1780, April 17.—The Company's flock of sheep in bad condition "from the long drought and present failure of our summer rains."

June 5.—The island in a distressed state.

1781, March 1.—Torrents damaged Sandy Bay fortifications.

June 2.—The island had sustained severe drought for three years.

1791, April 13.—Colonel Brooke informs Doctor Anderson at Madras, that while the grass is burnt up, his Guinea grass, at High Knoll, looked "green and beautiful."

May 30.—Thirty-two of the Company's cattle (including calves) died during six months. The Company's stock on July 11, was 340 cattle.

October 21.—The season continued alarmingly dry—the crops of potatoes failed—the yam grounds grown very unprofitable—and numbers of the cattle have died.

1792, April 9.—Company's cattle, December 31 -	369
Dead - - - -	91

Here it appears that one fourth of the Company's stock died.

1792, August 17.—The planters petition to Government, representing that they "have, by the late drought, lost one half of their stock of cattle."

Philosophers of all ages have built a hope of being able to discover by repeated observations, some rules concerning the variations of seasons, and changes in the weather, convinced that such discoveries would be of the highest utility, especially in agriculture; because by foreseeing, even in part, the circumstances of the seasons, we should have it in our power to prevent, at least in some degree, the losses arising from them. But from the imperfection of our present knowledge of this subject, it is

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impossible to account for the uncertainty in the fall of rain. Most countries whether mountainous or flat are subject to it: and it would seem from experience and comparisons, that the variations which have taken place, have sometimes been effected by the operation of some general cause. The severe drought felt here in 1791 and 1792 was far more calamitous in India. Doctor Anderson states, in a letter to Colonel Kyd, dated the 9th of August, 1792, that owing to a failure of rain, during the above two years, one half of the inhabitants in the northern circars had perished by famine; "and the remainder were so feeble "and weak, that on the report of rice coming from the Malabar "coast, 5000 poor people left Rajamundry, and very few of them "reached the sea-side, although the distance is only 50 miles." The Doctor farther observes "that betwixt the latitudes 16° and "18° on the coast of Coromandel, there was so little rain during "the years 1764, 1765, and 1766, that the country was desolated "by famine." It appears by Mr. Bryan Edwards's History of the West Indies, that the season of 1791-2 were unusually dry at the island of Montserrat.

It will be observed, by the extracts I have given, that no notice is taken of dry seasons at those periods; and that the greatest continuance of seasons *uncomplained of*, was betwixt the years 1724 and 1738. This interval was fourteen years. Now as there has been no serious drought since 1792, it should be kept in mind that the present interval of favourable seasons, being nineteen years, already exceeds any other on record. We know not how soon another visitation may take place. Let us then be wise and prudent, from dear bought experience, and use every means in our power to be prepared for it.

15*th August*, 1811.

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SECTION VIII.

Modes proposed to the Landholders for averting the Evils incident to Seasons of Drought.

ALTHOUGH I have frequently endeavoured to draw the attention of breeders of cattle here to their own interests, and have strongly urged them to imitate the practice of the most enlightened agriculturists, by raising green crops of corn, mangel wurzel, turnips, potatoes, &c. for the purpose of preserving the lives of poor half-starved beasts, at the time the grass lands are burned up, or when the rains set in—yet, in case some of them, who have never witnessed any other management than that which has ever prevailed here, should consider such things as mere effusions of imagination or fancy, I must therefore request their attention to the following extract from the New Farmer's Calendar.*

The testimony of an experienced "farmer and breeder," as well as an able writer upon these subjects, will shew that my sentiments are not singular; and that the practice I recommend has long been adopted, with complete success, both on the Continent of Europe, and in the United Kingdoms. I should hope that such testimony, added to the facts and proofs I have adduced ("that crops of corn are infinitely heavier, and far more certain, "than the produce of even the best grass lands") will afford to every unprejudiced mind the most unerring conviction that the proposed new system would be extremely advantageous; and that it is even more peculiarly suited to the circumstances of

* On the green and root crops, for "the support of cattle."—See New Farmer's Calendar, page 382.

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Saint Helena than perhaps of any other establishment of the British empire.

I therefore entertain a sanguine hope that the breeders of cattle may look to their own interests, and that they may at length listen to the voice of reason and experience, and immediately set about guarding themselves and families from inevitable ruin, to which they are every season exposed, merely through improvident management.

But, if neither facts nor arguments will awaken them to a sense of the evils incident to an entire dependence on pasture lands, let them then duly reflect on the dreadful effects they will undoubtedly feel, if no precautions are taken, whenever it shall please the Almighty disposer of all things to revisit Saint Helena with another calamitous season similar to those which have been sometimes experienced here: and particularly in the years 1791 and 1792. Alas! under our present circumstances, what would be the consequence of such a visitation: Our stock of cattle may be estimated at 20,000 pounds sterling.—Half this sum might be irrecoverably lost: and as the effect of a diminution in the breeding stock would long be felt by the proprietors, it is not too much to say that the loss, consequent to so great a calamity, to themselves and families, would not be less than the full value of the present stock of cattle.

In page 76 of the Goat papers, it is proved that in four months from the period of sowing oats, 36,320 pounds of green fodder were obtained at Long Wood from an acre. Suppose 50 pounds of this nutritious sustenance were allotted to each beast—one acre would feed two throughout the year—four for six months—or eight for three months.

Let the proprietors also consider the vast importance of having their stock of working oxen maintained at all times in full

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strength and vigour, and compare the work they would perform with that of animals so much exhausted that it is sometimes with difficulty they can crawl up the long ascents of this island. Let them compare also the weight and value of a well-fed beast for slaughter, with those miserable creatures that are sometimes sold to the shipping (*perhaps to save a natural death*;) and they cannot fail to be convinced of the superior advantages of the proposed, over the present system of feeding cattle.

August 15*th*, 1811.

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SECTION IX.

On Pineaster Trees, communicated in Letters to Sir JOSEPH BANKS *and Sir* JOHN SINCLAIR.

To the Right Hon. Sir John Sinclair, Bart. President of the Board of Agriculture.

SIR,

I BEG leave to present you with a specimen of fir timber, the produce of pineaster trees raised on this island. The transmutation which has been effected, by some natural cause, or causes, in the texture and appearance of fir timber, seemed to me so very curious and extraordinary that I could not deny myself the gratification of submitting it to the inspection of yourself, and of the Honourable Members of the Board of Agriculture.

The inclosed is a copy of my letter to the Right Honourable Sir Joseph Banks; which, with the St. Helena Register of July last, will afford you full information concerning those pineaster trees; the latter also contains my sentiments upon the vast benefits that would undoubtedly, in a very short period, result to this denuded island, if a due regard were paid to the propagation of trees that produce so beautiful and valuable a timber.

I have the honour to be, with great respect,

SIR,

Your most obedient humble Servant,

ALEXANDER BEATSON.

St. Helena, 18th September, 1811.

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To the Right Honourable Sir Joseph Banks, K. B. President of the Royal Society.

SIR,

HAVING lately discovered that pineaster trees raised at St. Helena, from English seed, yield a timber far superior to any of the pine species I have ever seen or heard of, and conceiving that their rapid growth, and the very extraordinary change which has been effected in the appearance and texture of fir timber, are circumstances deserving the attention of those who are accustomed to contemplate the causes and effects in nature, I beg leave to present you with a specimen of the fir timber of this island.

Of the tree from which this specimen was taken, I have published a short account in page 17 of the inclosed St. Helena Register: but after I had sent it to the press, I perceived I had been led into a mistake in naming it "Scotch fir;" for upon examination, and comparing its branches, leaves, cones, and seed, with the descriptions of the various species of pine, they seem to me in every respect, to accord with those of the pineaster. *Pinus foliis geminis crasciusculus glabris, conis pyramidatus acutis.*

In order, however, to be further satisfied on this matter, I have sent by the present conveyance, to Sir Hugh Inglis, a twig and cones of the trees in question, together with some seeds of the very tree from which the specimen of wood was taken. It is of consequence to be certain upon this point, that I may receive the proper seed from England; for it is my intention to establish seed-beds and nurseries, sufficient to plant on this island several hundred acres of this most valuable timber.

Many trees of different sorts have been already tried here; there are none, however, so peculiarly adapted to the climate and

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soil, nor that stand the almost unceasing south-easterly wind, so well as the pineaster. In the higher and cooler parts they thrive surprisingly; but in those less elevated, and towards the north and south extremities of the island, the summer heats are too powerful for the propagation of trees that are indigenous to the colder climates.

I have been lately informed by Doctor Roxburgh, that his attempts to raise the oak in the vicinity of Calcutta have failed. Here it is seen covered with beautiful foliage for about nine months in the year, and its girt attains a considerable size; yet the main stems seldom rise above 8 or 10 feet: whereas the pineaster, when sheltered under the leeward sides of the hills, against the prevailing south-east wind, grows straight and beautiful, and arrives at the height of 50 to 60 feet in the space of twenty-four years.

The following are the dimensions of a pineaster tree (transplanted from a seed bed, sown on the 1st of July, 1787) which grows upon the leeward side of a hill about 300 yards west from Plantation-house. It is therefore well sheltered, and having been drawn up perfectly erect and straight, by the surrounding oaks, it is fit for a small mast of 35 or 40 feet in length.

	feet	in.
Lower girt, at 1 foot above ground, - -	4	8
Girt, 26 feet ditto, - - - -	3	7
Of serviceable timber, the length is -	40	0
Total height to the summit of the highest branches	58	0

I have the honour to be, with great respect,

SIR,

Your most obedient humble Servant,

ALEXANDER BEATSON.

St. Helena, 18*th September*, 1811.

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SECTION X.

On Guana or Sea-fowl Dung—and Experiments on the Culture of Mangel Wurzel. Communicated in a Letter to Sir JOSEPH BANKS, *Bart.*

To the Rt. Hon. Sir Joseph Banks, K. B. President of the Royal Society.

SIR,

BEING much indebted to you for a Communication on the subject of GUANA, or SEA-FOWL DUNG, which first led to its being noticed as a manure on this island, I beg leave to present you with the accompanying "REMARKS on the CULTURE of MANGEL WURZEL;" in which you will have the gratification of observing the very powerful effect of the GUANA, when contrasted with HOG'S DUNG and ASHES, or with land unmanured.

I have the honour to be, with great respect,
SIR,
Your most obedient humble Servant,

ALEXANDER BEATSON.

St. Helena, 15th October, 1811.

Remarks on the Culture of MANGEL WURZEL *in the Island of St. Helena.*

My attention was accidentally directed to the culture of *mangel wurzel,* which is the white or sugar beet, lately so celebrated in Prussia, by observing the rapid vegetation of its leaves, and the frequent cuttings obtained from some plants that were set out on the 6th February from a seed-bed sown on the 3d January, 1809: but it was not until the 21st of June following

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that I resolved to try the effects of manures; and, accordingly, a portion of the transplanted mangel wurzel, being 130 plants, was left without manure: 81 plants had a top dressing of hog's dung and ashes, at the rate of about 30 loads, or 360 bushels per acre, and the remaining portion, containing 48 plants, was treated in the same manner with Guana, or sea-fowl dung, in the proportion of only 35 bushels per acre.

If I had predetermined to report on these experiments, I should have made them in a more regular form; that is, I should have allowed an equal number of plants to each; but under the circumstances which have led to them, the result shall be given, exactly as they were recorded at the periods of cutting the leaves, and when the experiments were completed.

The three first cuttings not having at the time attracted my notice, were not weighed; I have therefore taken them in the following Table, at the proportions of the 4th, 5th, and 6th cuttings, which is a fair presumption, as they are in general, most productive in the early stages of their growth.

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TABLE I.—*Exhibiting the Produce in Leaves of 259 Plants of Mangel Wurzel at Plantation-house Garden, from Seed sown on the 3d January, transplanted on the 6th February, and manured on the 21st June* 1809.

Dates of Cuttings	No Manure. 130 Plants	Hog's Dung. 81 Plants.	Guana, or Sea-fowl Dung 48 Plants.	
1809.	lb. oz.	lb. oz.	lb. oz.	
Feb. 24	37 0	107 0	106 0	1st Cutting } Estimated
April 8	45 0	123 0	72 0	2d Ditto } Estimated
June 21	62 0	117 0	58 0	3d Ditto } Estimated
Aug. 22	36 8	107 4	106 6	4th Ditto
Oct. 22	45 0	123 0	72 0	5th Ditto
Dec. 22	62 0	117 8	58 8	6th Ditto
1810.				
March 23	38 0	62 0	37 8	7th Ditto
May 23	81 0	126 0	114 0	8th Ditto
July 24	29 0	72 0	37 0	9th Ditto
Sept. 22	36 0	79 0	65 0	10th Ditto
Nov. 22	36 0	59 0	32 0	11th Ditto
	507 8	1092 12	758 1	Totals
	—167th	—269th	—454th	Proportions of an Acre
	84752	293949	344160	Acreable Produce in lbs.
	—38	—131	—153	Ditto in Tons.

The plants were placed in rows, two feet asunder, in a blackish stiff soil; and at the distance of one foot in the rows. An acre planted in this manner would contain 21780 plants; 48 plants are therefore very nearly (as entered in the Table) the 454th part of an acre; because $48 \times 454 = 21792$. In the same manner the other proportions are deduced.

Observing the produce in leaves had diminished at the last three cuttings, and that they had also been much infested with caterpillars since they began to decline, I had the roots taken up on the 17th January 1811. From the 22d November to that time the growth of the leaves was inconsiderable; they were,

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however, cut off close to the crowns, and the whole, after being pruned of the small fibres, weighed 1196 pounds.

As the roots of the experiment lots were not separately weighed, I deduce their respective produce in the following manner.

As the total weight of the leaves,
Is to the total weight of the roots;
So is the weight of the leaves from each experiment,
To its proportion of the roots. Then,

lbs.		lbs.		lbs.		lbs.	
2358	:	1196	::	507	:	257	no manure.
2358	:	1196	::	1093	:	554½	Hog's dung and ashes
2358	:	1196	::	753	:	384½	Guana, or sea-fowl dung.

These results being reduced to acreable produce, in the same manner as the leaves in the preceding Table, will be as follows;

No manure, 257lbs. × 167th = 42919lbs. or 19¼ tons of roots per acre.

Hog's dung and ashes, 554½lbs. × 269th = 149160lbs. or 66½ tons of roots per acre.

Guana, or sea-fowl dung, 384½lbs. × 454th = 174563lbs. or 77¾ tons of roots per acre.

Now, the acreable produce in leaves and roots from each experiment will stand thus;

	Leaves Acreable Produce.	*Roots* Acreable Produce.	*Total acreable Produce of the leaves & roots.*
No manure - -	38 tons	+19¼ tons	= 57¼ tons
Hog's dung and ashes	131	+66½	=197½
Guana, or sea-fowl dung	153¼	+77¾	=231

These results are manifest proofs of the great benefit of manuring the lands. They likewise shew the surprising effect of the Guana, from which it may be inferred, that 35 *bushels* of this manure are equivalent to 35 *loads* of hog's dung and ashes; or,

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or in other words, that one bushel of the former is, in effect, equal to twelve bushels of the latter.

The fluctuations that were found, at the periods of cutting the leaves, in the effects of these two manures, are rather remarkable, and not easily to be accounted for. The general effect of the Guana, during the whole period from the 21st June 1809, was superior to the hog's dung. Yet this last, on six occasions, exceeded the others: but as this and other comparisons, may be made, and a variety of deductions may occur, upon inspecting the following Table, it would be superfluous to add any particular observations.

TABLE II.—*Shewing the Produce of Forty-eight Plants of each Experiment, and the Fluctuations in the Produce of Leaves, at the Periods of Cutting.*

Dates of Cutting.	Leaves of 48 plants. No manure	Leaves of 48 plants. Hog's-dung and ashes.	Leaves of 8 plants. Sea-fowl dung.	
1809.	lbs.	lbs.	lbs.	
February 24	13	63	106	1st Cutting }
April 8	16	73	72	2d Ditto } Estimated
June - 21	23	70	58	3d Ditto }
August 22	13½	63½	106½	4th Ditto
October 22	16¼	73½	72	5th Ditto
December 22	23	70	58½	6th Ditto
1810.				
March 23	14¼	36½	37¼	7th Ditto 3 months growth.
May - 28	29½	75¼	114	8th Ditto
July - 24	10½	42	37	9th Ditto
Sept. - 22	13¼	46½	65	10th Ditto
Nov. - 22	13¼	35	32	11th Ditto
Produce	186½	648¼	758¼	in 22 months and 19 days
Multiply by the proportion of	454th.	454th	454th	48 plants to an acre.
Pounds.	84671	294305	344160	acreable produce of leaves.

As these products correspond as nearly as could be expected, with those computed from three different proportions of an acre,

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in Table I.—it is a proof there can be no material errors in the calculations.

When the roots were taken up, on the 17th of January last, very few of them were in a decayed state; some had rotted in the centre: but, in general, they were sound and good; notwithstanding they had remained above two years in the soil; that is, from the period of sowing the seed. The four largest roots weighed as follows:

No. 1	- - - - - -	28 pounds.
2	- - - - - -	11 ditto.
3	- - - - - -	19 ditto.
4	- - - - - -	20 ditto.

Having thus detailed these experiments, I shall now proceed to offer a few remarks, which will shew the important benefits that might soon be derived from a general, and extensive culture of this excellent vegetable.

It certainly possesses advantages over every other plant hitherto introduced in field culture.—Its produce is immense, and I have found it to grow, with considerable luxuriance, upon land where no other vegetation was ever seen.* It has also the singular

* This was determined by an experiment I made soon after my arrival here. I selected a barren ridge, between two deep ravines, on the north-west side of High Knoll. From its situation and declining surface, no moisture could be retained. On the 27th August 1808 it was trenched, and on the following day sown with sixteen different sorts of seed, so that it had not the advantage of the meliorating effects that might have been derived from exposure to the air and atmosphere. For a long time there was no appearance of vegetation; at length, in the beginning of April, 1809, seven months after sowing, and when it had been soaked by the rains, I observed the drill of mangel wurzel one connected line of fine thriving plants: the fifteen rows of other seeds, excepting a few of the rape, had not vegetated. This is a positive proof that mangel wurzel would grow in almost any soil or situation. The seeds which were sown at the same time as the mangel wurzel, were coffee, cotton, wheat, barley, oats, peas, buck wheat, spring tares, lucerne, burnet, sanfoin, silla, chicory, rape, and sunflower.—Not a plant of any of these, except the rape, which soon after died, ever appeared.

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property of being unmolested by an insect (I believe the dolphin fly) which is here extremely destructive to cabbages, turnips, and radishes. I have very often observed, where alternate plants of cabbage and mangel wurzel were growing in the same rows, and touching each other, that whilst the former were absolutely annihilated by that destructive insect; not one was to be seen on the mangel wurzel leaves. This extraordinary circumstance seems to favour Lord Bacon's notions (however much they have been exploded) that some insects "breedeth of dew and leaves in "spring; and commonly when the East winds have much "blown—the cause whereof is, the dryness of that wind; for, to "all *vivification upon putrefaction*, it is requisite the matter be "not too moist."

But, whatever may be the origin of those insects, it is of little consequence to the present subject. I have merely stated a fact, which may possibly attract notice, and may be of some use to those who are engaged in the contemplation of matters of this nature.

The mangel wurzel, when fairly established in the soil (which, like every other crop upon an extensive scale, ought to be just before the expected rains in January and February, or in July and August), will soon acquire such vigour as to become almost independent of rain: for having a tap root, penetrating 12 to 18 inches, or more, into the soil, it will always find sufficient moisture, at that depth, for carrying on the process of vegetation. In the course of five or six months, from the seed, if sown or planted in good soil, three cuttings of the leaves may be obtained, which may average about three pounds from each plant; and the roots will then have attained the weight of five to ten pounds each. Wherefore it seems to me, after every attention I have given this subject, that the most profitable culture would be to take three cuttings of the leaves, and at the third cutting, to dig up the roots:—these, as well as the leaves, afford a nutritious food for

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cattle, sheep, hogs, &c.—The leaves are also an excellent substitute for spinage.

It is very probable that a more abundant produce from mangel wurzel than appears in my experiments, might at all times be secured, if the lands were manured, and carefully prepared for its reception, and the proper seasons of sowing and planting attended to. In a piece of strong land, at Plantation-house, newly broken up, without being manured, some of the plants from seeds sown on the 3d of January, were set out on the 6th of February, 1809.—On the 11th of October following, I sent on board His Majesty's ship Lion, fifty of those plants, which were the finest I had ever seen. The following were the weights and circumferences of the five largest:

	Weight of the whole plant.		*Circumference of the roots.*	
	lb.	oz.	ft.	in.
No. 1	41	3	2	1
2	39	1	1	9
3	39	6	1	10
4	38	0	2	0
5	37	14	1	11

At Long Wood, Colonel Broughton has lately taken up some very fine specimens from land that was not manured: they were of six months growth from the seed—the leaves had been cut twice. Many of the roots weighed from six to ten pounds each: but admitting even the lowest of these rates, and allowing one pound of leaves at each cutting, the produce would be eight pounds from each plant; which, at 20,000 plants to an acre, would be 160,000 pounds, or about 70 tons per acre, of nutritious food for cattle, in the short period of five or six months from the time of sowing the seed. Can any thing place the importance of the culture of mangel wurzel in a more obvious point of view than this deduction?

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But the largest plant that has yet been produced here, is one I sent to England, with several others, in July, 1810.—It was raised from seed, put in the ground on the 3d of March, and transplanted to land newly broken up, on the first of May, 1809; when it was taken up in July (that is, at sixteen months from the period of sowing) the circumference of the crown of the root measured 37 inches. It had about twenty strong horizontal branches, two or three inches in diameter.—The leaves and small ends of those branches were cut off, and weighed 52 pounds. The root and remaining parts of the branches on it, in the state it was sent to England, weighed 63 pounds.—In all, the weight of this one plant, from unmanured land, was 115 pounds. I have been since informed it was by far the largest of the kind ever seen in England.

15*th October*, 1811.

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Sam.l Davis Esq.r del

Wm Daniell fecit

James Town, St. Helena, viewed from the road to Long Wood.

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SECTION XI.

On naked Barley, or Barley Wheat—Report and Opinions of Warren Hastings Esq., and of Sir Hugh Inglis, on the Utility and Importance of this valuable Corn—Singular Account of its Introduction at St. Helena.

In this island, where the intemperate use of spirits had raged for more than a century, and where now the breweries are successfully established, and a change introduced, from which the most salutary effects have already resulted, upon the character and conduct of the garrison, the blacks, and others, by the substitution of wholesome beer for an abominable and deleterious Indian spirit, that had cost the Company more in the lives of their soldiers than all the revenue supposed to have been derived from it—it is undoubtedly of much importance, in the present pursuits in agriculture, to be informed of the *very best* sort of barley for malting.

In the sixth volume, part 2, of the Communications to the Board of Agriculture, that distinguished character, Warren Hastings Esq.; writes to the President of the Board, "that he has cultivated *naked barley*, about twelve years; having received the first seeds of it from Mr. Pacey, an eminent farmer in Gloucestershire, under the name of black barley; though, from its resemblance to wheat, he would rather have called it *barley wheat*; but he adopted the name of the head of the communication, out of deference to the Board of Agriculture. The original stock was 58 grains, which were sown in the fruit garden, and the first record of its produce was 10¼ bushels in 1799, which had increased to 30 bushels in the following year, since which

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time it has been sown instead of common barley. The quality of the grain is asserted not to have degenerated, but the assertion is made in 1809, with a confidence something abated from that of the preceding year; and the only change of soil has been from the higher to the lower lands, and *vice versa*, on the domain at Dayelsford. It was sown at the same seasons with other barley, but no trial to ascertain the relative quantity of produce has been made with any satisfactory result; but in 1805 it was believed to be rather superior. The straw is said to be as good, if not better, for cattle, than that of common barley, and the weight of an equal measure to exceed in the proportion of 5 to 4; and as an exhausting plant it is not deemed worse than common barley; and all the grasses are found to thrive well under it. *Naked barley* has not found a purchaser when offered in market, but Mr. Hastings cultivates it for the sole purpose of converting it into malt, for which he considers it particularly adapted, as he has seldom known one grain to be defective in vegetation at the malt-house.

The writer concludes by expressing his decided conviction of the great utility and importance of the grain, and declares his intention of extending his culture of it beyond the quantity required for his own use, that the surplus may be for sale at the disposal of the Board. He considers it to be the corn, which, next to rice, gives the greatest weight of flour per acre, and it may be eaten with no other preparation than that of boiling, and requires little or no dressing at the mill, having no husk, and consequently producing no bran"

The superiority of this kind of barley has been further extolled in some observations that follow the preceding communication. —" When barley wheat is more widely cultivated, it will be better " known, and we have no hesitation in pronouncing that the

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" desire of extending the cultivation of it will be beyond the " power of Mr. Hastings to supply the seed."

The wheat barley now growing here, is from Mr. Hastings's stock. I received it from Sir Hugh Inglis, who has been indefatigable in every thing that relates to our improvements. At the time he sent it, he informed me that a gentleman in Devonshire having occasion to plough up four acres of a lawn, they were first sown with turnips; and he had a very poor crop. Early in April he again sowed the four acres, with four bushels of barley wheat, which came up very thin, but at the end of June, when Sir Hugh Inglis saw it, it was the wonder of the country, and at harvest the four acres yielded two hundred and forty bushels, or 60 bushels per acre.

Some experiments I have lately made with this valuable corn, will be found to coincide with the statements given by these respectable authorities. They will likewise shew that both hexagonal barley, and barley wheat, are rather improved in this soil and climate, because from comparative weights of one hundred grains, (the produce of the island crops,) *I have invariably found them* much heavier than the English seed.

Of the two casks of barley wheat I received from Sir Hugh Inglis, in 1810 and 1811, unfortunately not a grain would vegetate: the whole was damaged. Relying on the casks, I gave ten pounds of seed, which were contained in a bag that accompanied the cask in 1810 to Colonel Broughton. This seed was perfectly good. It was sown at Long Wood, and had a fine appearance, but as it approached to maturity, it was attacked by Canary birds, and none was saved. Fortunately, however, I reserved a few grains, taken out of the bag, for one of the numbers of an experiment bed in the front garden at Plantation-house. These were sown in a square, rather less than three feet, and of 81 dif-

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ferent kinds of seeds, the barley wheat was the first that sprouted. The progress will be seen by the following Table.

Table of Experiment in Barley Wheat.

1810, July 31st.—Sowed a few grains in a bed about 3 feet square.

August 11th.—Young plants appeared. The time of sowing was a month too late, the weather cold, and only one heavy shower, since the seed was sown.

Sep. 25th.—From the ground to the top of the leaves 2 feet.

Oct. 14th.—Strong: but not in ear.

20th.—Ears appearing.

Nov. 15th.—Handsome round years—counted 96 grains in an ear.

29th.—Approaching to ripeness—Canary birds so greedily devour it, that we are obliged to cover the bed with nets.

Dec. 28th.—The ears were collected, some were bearded, and others were without beards—I concluded at this time they were of different species—and accordingly separated the plain from the bearded grains.

	Grains.	
Two ears of the bearded sort yielded 138 barley corns, which weighed - -	48½	Aps. weight.
Two ears plain, containing 109 barley corns, weighed - - -	51½	ditto.
Total weight of the produce of 4 ears	100	

Average weight of 100 barley corns - 40½ grains.

The total quantity saved of both kinds, was 2850 barley corns, which I have since ascertained would fill three common sized wine glasses.

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From this fresh seed I hoped to establish a sufficient quantity for extensive cultivation: and I have not been disappointed. I accordingly prepared a spot in the garden, measuring 108 links by 37, or about the 25th part of an acre. It was marked out in rows 12 inches asunder, and the seed dibbled three inches deep at 9 inches apart in the row. The number of dibble holes was 2280; but as 570 holes had two seeds in each, the number of grains dibbled was 2850: the following is the result.

1811. March 16th.—Dibbled 2850 grains of barley wheat in 2280 holes, of which 570 had two seeds.

21st.—Plants appeared.

31st.—Promising crop.

May 15th.—Remarkably exuberant.

26th.—Some in ear.

June 4th.—Many in ear.

9th.—Almost all in ear, a very fine crop.

July 25th.—Nearly ripe.

28th.—No difference between the produce of the plain and bearded seed. In each there are some with beards and some plain. The beards fall off as the crop ripens.

29th.—Cut the crop. Produce 135 pounds from the 25th part of an acre, is at the rate of $56\frac{1}{4}$ bushels, at 60 pounds per acre.

On the 3d of August this small quantity was spread over about four acres and ploughed in. It is now a strong and exuberant crop, fall in ear, and promises a very abundant produce, even more than sufficient to sow *all* the cultivated lands at present on this island.

Justice indeed has not been done to any of these experiments; they have all been too late in sowing. If the first had been sown about the end of June, 1810, the second about the end of December, and the last, now in the ground, in the end of June,

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they would all have had the full benefit of the rainy seasons, and a better produce might have been expected. To these seed times I shall, in future, pay the strictest attention; having seen numerous instances of the bad effects of being too late in putting plants, or seeds, in the ground.

Barley wheat is of a darker hue than wheat in general: the grains are smaller; and its relative weight with other corn appears by the following comparison:

	Weight of 100 Grains of English Seed.	Weight of 100 Grains of St. Helena produce.
Wheat -	65 grains Apoth. weight	
Hexagonal Barley	62 ditto	71½ at Plantation-house
Barley Wheat	47¼ ditto	*50½ second crop
Hexagonal Barley	- - - -	78¼ at Long Wood

I have already stated, that the produce from 2280 dibble holes weighed 135 pounds (or 2160 ounces); this being the $\frac{96}{100}$ part of an ounce, is very nearly one ounce from one seed.

Very different from this was the result of Mr. Arthur Young's experiment in the year 1791, with common barley; he found that 9½ seed grains produced no more than an ounce, whereas in my second experiment 9½ seed grains of barley wheat must have given $7\frac{2}{10}$ ounces, or about *seven times* the weight yielded from common barley.

An acre dibbled in rows, in the same manner as my second experiment, would contain 58,080 holes; wherefore, if 2280 holes yielded 2160 ounces, an acre would have produced 55,900 ounces; or 3494 pounds avoirdupoise.

Let us now compare this produce with Mr. Young's experiment above alluded to.

On the 25th of April, 1791, he dibbled 198 grains of four rowed

* 100 grains of the first crop weighed only 40¼.

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barley, one seed in each hole. On the 29th of September "he reaped them; and, clipping off the ears," weighed them; the produce was 20¼ ounces. He does not state whether this be the weight of the ears, or of the clean grain: but, afterwards, he infers that 9½ grains of seed produced one ounce of corn.

Hence, it follows, if 198 seed grains gave 20¼ ounces, 58,080 would produce 6013 ounces, or 376 pounds.—Thus we find that the *weight* of my produce, from an acre of barley wheat at St. Helena (being at the rate of 3494 pounds); is about nine times *the weight* of that of common barley, according to Mr. Young.

But, quitting these minutiæ, I will take a more enlarged view of these comparisons, and proceed by a different mode of investigation.

The average acreable produce of common barley in England, according to Mr. Donaldson, is about 30 bushels: but rating it 40, and the medium weight of a bushel, at 48 pounds; this average produce will be no more than 1920 pounds; or 1574 pounds *less, in weight,* than from the second barley wheat experiment.

In short, whether we consider the comparatively small quantity of barley wheat seed required to sow an acre, its *more weighty* produce than common barley, its naked, instead of husky grains, and its equality with other barley, in the produce of straw; and, if these circumstances are combined with Mr. Hastings's opinions on the various uses to which barley wheat may be applied; it seems to be, in every respect, infinitely superior to the common sorts of barley. It is probable too, from its near resemblance to wheat, that it may yield a flour superior to that from common barley; and although this is a point which has hitherto not been ascertained; yet from what is already known of the barley wheat, it certainly bids fair to become an invaluable corn on this island.

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By the comparisons of the weights of English seed, with that produced from the first and second St. Helena crops, it has been seen that the second crop yielded heavier and larger corn than the English, in the proportion of 47¼ to 50½, and that the first crop, gave only 40½ grains weight to the 100 barley-corns. Further trials may determine in what respects the barley wheat may be affected here by the climate and soil; for having beheld so extraordinary a change, as has taken place in the quality of fir timber, (to a resemblance of pale mahogany) from pineaster trees raised from English seed, who can tell but other vegetable productions may likewise undergo (though less perceptibly) a similar change? In the weight of common barley, I have stated that the St. Helena produce has been found more weighty than the seed from which it was raised; and the following notes will prove that it maintains this superiority.

1809. March 14th.—100 English barley-corns weighed 62 grs.
100 St. Helena ditto - 71½
Difference - 9½.

The above were kept in a dry place, and again weighed nineteen months afterwards.

1810. Nov. 1st.—100 English barley corns weighed 61 grs.
100 St. Helena, ditto - - 69
Difference - 8

Barley wheat is therefore in every point of view, a grain that merits the attention of all our cultivators; for by common industry it might be raised in sufficient quantity to supply the island breweries, by which, those sums that are now remitted to England (from £6000. to £8000. annually for malt,) might be retained here and participated among the landholders. Surely persons who duly reflect on these important facts, and who com-

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pare the magnitude of the prospects that the extension of agriculture holds out, with the small supplies annually furnished to the shipping, must be convinced, that the present system of limited cultivation is a bad one; and that the profits that are received from the lands of St. Helena, are trivial indeed in comparison with those that are attainable.

November, 1811.

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SECTION XII.

On clearing Lands of Grubs—Detail of a Set of Experiments, by which is ascertained an effectual Mode of clearing Lands of those destructive Insects.

THE suggestions of an anonymous writer for clearing land of grubs, which appeared in the Register for February last, have induced me to try the effect of what is recommended, by a set of experiments; and as the result has been completely successful, the following account will, I conceive, be gratifying to every agriculturist.

The objects of my experiments were to imitate a clean summer fallow; and to contrast it with land newly broken up, and having upon it young crops, for the sustenance and nourishment of that destructive insect.

With this view, I prepared four large boxes, with ledges of wood overlapping the insides of the upper edges, in such a manner that the grubs could not escape. These boxes, placed in the open air, were nearly filled with soil, taken from a field lately broken up, where those insects abounded, and had totally destroyed a fine crop of oats after it had grown to the height of 6 to 8 inches.

The soil was carefully sifted, and every grub taken out, before it was put in the boxes. Two dozen grubs, of different sizes (from about an inch and a half in length, to half an inch) were then allotted to each box. Those in No. 1, were fed daily with fresh leaves of mangel wurzel; No. 2, with potatoes and potatoe haulm; No. 3 and 4, represented a clean fallow, without a

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particle of vegetable substance remaining; the only difference was, that No. 4 was occasionally watered.

It was on the 10th of September last, that twenty-four grubs were put into each of the boxes; on the 14th, I examined them as follows:

No. 1.—Grubs fat and lively.

No. 2.—Ditto ditto

No. 3.—Some grubs dead, others of a blackish colour; thin and sickly.

No. 4.—The same as No. 3.

On the 17th, I again examined them.

No. 1.—Some as healthy and vigorous as at the time they were put in the box.

No. 2.—Some healthy; but in general fallen off.

No. 3.—Some dead; the rest miserably thin and shrivelled; and of a darker colour.

No. 4.—Some dead; but in general better than No. 3.

On the 23d of September, observing in No. 1 a ball of clay, about the size and shape of a small walnut, and not knowing what it was, I broke it, and accidentally destroyed a chrysalis, the inside of which was filled with a liquid resembling cream. I afterwards found that it is in this manner the grubs surround themselves with soil when they begin to perceive the approaches of transformation.

On the 1st of October, the grubs fed in boxes, No. 1, and 2, were still fat and thriving; but in the starvation boxes very few remained alive.

On the 13th of October, a chrysalis had been formed in box No. 2: there might have been more; for I did not, until the 23d, empty the boxes, in order to ascertain the state of the grubs. On that day it was as follows:

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No 1, contained 18 lively chrysalids, and 12 healthy grubs: these are six more than were put in the box. This increase I conceive to have been occasioned, either from some extremely small grubs in the soil having escaped notice, or from eggs having been hatched after the experiments were begun.

No. 2, contained 16 chrysalids and 6 strong fat grubs: two must have died.

No. 3, contained a single chrysalis.—This possibly proceeded from one of the grubs, at the time it was put in, being in readiness for transformation; and consequently it escaped the fate of every other that was put in that box.

No. 4. In this box not a grub or chrysalis was to be found, all had perished; not even their remains were to be discerned. I think it therefore probable that the wood-lice (oniscus armadilla), which were found in great numbers, particularly in No. 3 and 4, had devoured the bodies of the dead grubs.

After the examination on the 23d of October, the grubs and chrysalids belonging to No. 1 and 2 were replaced in their respective boxes, and four young mangel wurzel plants were set in each, and watered. On the morning of the following day the plants in No. 1 and 2 were all destroyed: whilst those in No. 3 and 4 are still in a thriving condition.

On the 30th of October, one of the chrysalids taken from box No. 1, and put into a glass, covered with thin gauze, produced a grey moth.

I have been induced to give this minute detail of the experiments, as I think it may convey some useful information upon a subject that is interesting to agriculturists; for I remark, in a late publication, wherein several modes for the extirpation of the grub are pointed out, that the author concludes with this observation.

"But notwithstanding these judicious remarks, much still

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" remains to be done, in order to perfect our knowledge of the " nature and modes of destroying these very destructive insects." —*Farmer's Dictionary, see Grub.*

The preceding detail undoubtedly affords a striking proof of a clean fallow being one of the most effectual modes of clearing lands of the grub. It was, indeed, reasonable to suppose it would be so; because, if no vegetable substance remain in the soil, for the sustenance of so voracious a creature—whether he be newly hatched by the summer heats, or arrived at full growth, it seemed, at least probable, that he must infallibly perish. Every one can judge whether or not this fact has not now been clearly established.

In the first stage of these experiments I was, for a short time, apprehensive that the plan recommended by the anonymous writer might not succeed; because I observed that some of the grubs, that were put up in paper, had discharged a considerable quantity of earthy substance. It seems therefore probable, that (like worms) the grubs, in some degree, subsist upon earth; but the results have shewn that they cannot possibly exist, even for a few weeks, without vegetable food.

A prolonged, or a repeated fallow would, no doubt, be more efficacious than the short period of my experiments. This should be given in warm and dry weather; for it is then the eggs, deposited by moths, bring forth the young grubs.—Upon these too, in their tender state, the effect would be more speedy than upon grubs that are arrived at full growth. In this stage they are extremely tenacious of life. I have seen them survive, for half a minute, upon ashes so hot that my fingers were burnt in a few seconds. I have kept some in a strong solution of tobacco—others in a solution of alkali, and found them alive, after being twelve hours in these steeps. The common roller has no effect upon

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them; yet I think the spiky roller would be a means of destroying them.

The grubs, on which my experiments were made, are, when full grown, about an inch and half long, and a quarter of an inch in diameter.—They are of a bluish colour, and of the moth tribe. This was ascertained by laying their chrysalids upon soil, in a glass covered with thin gause. I have already stated, that on the 30th of October, the second and final transformation took place: the grey moth that was produced measured seven-eighths of an inch in length.—It had two large dim eyes, very near to its mouth, and a feathered like top on its head, resembling an owl. One of these months lived in the glass seven days *without food*.

It is said, that "all caterpillars of the phalænæ tribe after having several times cast their slough, spin their cod, in which "they are transformed into chrysalids:" but the cod of the St. Helena grub is substituted by a crust formed of soil, and the excretions of the insect. Heat, or cold, evidently contributes to forward, or retard, the final metamorphosis. It has been shewn that the two changes were effected in seven weeks—that is, between the 10th of September and 30th of October. In colder climates, however, they are said to require a much longer time; and that the greater part do not come forth until the ensuing year.

The phalænæ, or insects, sprung from those chrysalids, do not possess the brilliance of butterflies; but what I imagine to be the male moth is more brilliant and active than the female. There is, indeed, a great difference in their form and colour. The wings of the one are wrapped up or folded round the body; and those of the other are more spread, and in shape resemble a delta. Some authors have given the moth the name of "night butterflies;"—and there seems to be a sort of analogy similar to that

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between birds of day and of night. Moths are known to be fond of light, and get into rooms when attracted by it. I have observed many of the species that produces the grub, fluttering around candles, and destroying themselves. It may, therefore, be inferred that great numbers of the parent of grubs might be annihilated, by placing fires of dry furze, or straw, or torches, in the fields during the night, at the times they are observed to have undergone this final transformation.

There seems to be also another method of destroying the grub, and preventing its propagation. It has been usually remarked that, at certain times, and more especially at night, it remains upon, or near the surface. I therefore conceive that, by means of a red-hot roller, or a perforated hollow cylinder filled with burning charcoal, and moved slowly along a field, many of them might be destroyed.

Mr. Hale, in page 478, vol. iii. observes, that "the grub is the "worm produced by *the egg of the beetle*. There is one parti- "cular kind more destructive than the rest, and when the grub "is mentioned, without any distinction, this kind is meant. It "is a thick, short, whitish worm, with a hard red head, and six "short legs. It is found among the roots of corn, and does pro- "digious mischief; it feeds on the sweet matter of corn, which "is, at that time, a kind of pap, like cream."

However correct this may be in the United Kingdoms, it does not apply to St. Helena. "This creature," says Mr. Hale, "is "the produce of the cockchaffer:"—but certainly the most destructive grub here is what is called "the black grub," which is the same as I have described; and its parent is undoubtedly a moth.

Mr. Hale's description corresponds, however, in some degree, to a white maggot ("hog-worm," as it is here named, from hogs

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being extremely fond of it) which is found in great numbers in old grass lands, when newly broken up. These have not hitherto been injurious to potatoes, or crops of corn: yet they are very destructive to pasture lands. I knew not, until lately, the cause of the barren appearance I had observed in many parts of the pastures. I had been told it proceeded from shallowness of soil, or from barren clays under the soil:—but, upon breaking up some old lays, it was discovered that, under these *apparently* barren spots, this "large white grub, with a red head, six short "legs, and nine breathing holes in each side, and measuring "from an inch to an inch and a half in length," had been at work, and had absolutely separated the sward, for an inch or more, from the sub-soil. I have examined many spots, where the verdure had disappeared, and invariably have found this destructive maggot. I have seen some taken out at 12 or 15 inches under the surface; and, at other times, have caught them destructively employed within a few inches of the grass, feeding on its roots, and occasioning the mischief. It seems to me, unless the lands, on which they have taken up their abode, are dug up, or ploughed, that the most serious consequences may be apprehended. Mr. Thomas Greentree, the other day, informed me that, on his lands, this species of insect did not appear until last year.—Already it has spread over several acres; and unless it is checked, it is impossible to foresee to what extent those depredations may be committed. It is not merely at Mr. Greentree's, but on Church-ground, at Mrs. Harper's, and to the southward of Mr. Defountain's, and many other places, that the ravages of this insect may be discovered. In the year 1751 an insect of the same description, but seemingly of a different species (for at St. Helena I believe the maggot becomes a brown cricket,) made its appearance in the county of Norfolk. So much did it multiply,

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that not only the verdure of the pastures was destroyed, but the roots of all sorts of vegetables were attacked—and their devastations were so great, that they had nearly ruined many of the farmers in one of the most fertile counties in England.

It was the want of potatoe seed that led to the experiment of oats, upon newly broken up land. I was aware of the hazard to which the crop might be exposed: but as the adjoining field, treated in the same manner, and planted with potatoes, has yielded a good crop, it proves clearly that there is little or no risk in beginning, newly broken up land, with potatoes. The mode of planting here, is also favourable—for by using the small whole potatoe as seed, there are many shoots: wherefore if even a few escape the grub, the crop will succeed: and this is the reason why potatoe crops are seldom seriously affected by the depredations of that insect. Repeated cropping and stirring the land, I have also found an effectual remedy; for in some that was at first greatly infested, there is not now a grub to be seen.

"Grubs feed on the sweet matter of corn, which is a kind of "pap, like cream." This property it evidently possesses at the time the plants are very young and tender—but, when they attain size and strength, the juices lose that sweetness, and are therefore, much less adapted to the nourishment of the young grubs; which are, indeed, the most to be apprehended.

The crop of oats that was destroyed, was sown, perhaps, too early—that is, on the 4th of June; and consequently about four weeks before the expected rains.—These, however, this year, in a great degree, failed—and the few showers that did fall, were immediately evaporated by the sun's heat. It was during this dry weather that the eggs of the grub were hatched; and that the young grubs came forth just in time to feed on the tender corn, that had been considerably retarded by the dry weather.

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To guard, as much as possible, against such formidable attacks, it seems advisable to sow corn towards the end of June or December; at which times, the rainy seasons may be supposed to be near at hand—for, whilst the rains continue, the grub cannot be hatched—and if accidentally they should come forth when the corn has been well advanced in growth (a circumstance also unfavourable to their generation, owing to the natural moisture in the corn, and the shade it affords the land) the young grubs would be in a manner deprived of their *natural food;* for, if the corn have attained strength, and have lost that sweetness it possesses when young, numbers would die for want of nourishment; and the corn, by setting forth numerous shoots, would be placed beyond the reach of the feeble attempts of young insects, and be less liable to injury from those that are full grown.

10*th December*, 1811.

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SECTION XIII.

Notes of Experiments in the Culture of Wheat, Barley, and Oats—green Crops of Fodder recommended—Suggestions for the Improvement of the Pasture Lands—Evil Effects of Feeding a Population—Comparison of Exports from the Farms in 1789 *and* 1809.—*Plans suggested for improving the Island.**

EXPERIMENTS at Plantation-house Farm, and at Long Wood, have not merely decided the practicability of raising all kinds of corn at St. Helena; but have proved that the introduction of agriculture would be highly advantageous to the land-holders. Their wheat and barley would be in constant demand for baking and brewing; their oats for feeding horses, poultry, &c.; and whilst their lands are producing these necessary supplies, the large quantities of straw from the first crops, as well as from after-cuttings, would be an acceptable and nutritious fodder for cattle, especially at those times when the grass is low—or when a disappointment in rain has happened. It is therefore evident that the idea which has been long entertained by many persons "that agriculture in St. Helena would diminish the sustenance for cattle," is very erroneous. So far from decreasing, it will be found that it would be the very best means of augmenting that sustenance—and, consequently, this island might be made to support a much greater number of cattle than has ever been upon it—for experiments have proved, that a single acre of wheat, barley, or oats, throughout the year, if used as a green fodder,

* This paper was printed for the information of the landholders, in the month of November 1810.

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yields as much sustenance as any ten or twelve acres of the best of the grass lands; and at the time the grass is low, an acre of green corn is worth at least fifty acres of such grass.

The following experiments will illustrate these observations.

Barley Experiment, 1808-9.

September 13th, 1808—Sown.

November 22d—Ears appearing.

January 19th, 1809—First cutting yielded 55¼ bushels per acre—the grain full and better than the English seed; for on the 14th March, when perfectly dried, 100 St. Helena barley-corns weighed 71½ grains, Apothecary's weight; and a hundred of the English seed barley-corns weighed no more than 62 grains.

March 1st—Again in ear.

March 13th—Second cutting, green in ear for fodder.

May 8th—A third time in ear.

May 9th—Third cutting, green in ear for fodder.

Hence, one crop of corn, and three crops of straw or fodder, were produced from the same seed, and roots, in less than eight months from the day on which the seed was sown. It may therefore be inferred, that one crop of corn, and three or four crops of fodder (which I understand have been obtained) may be produced from the same seed in twelve months.*

Barley Experiments, 1810.

March 15th, 1810—Sowed an acre with a bushel and half of Cape barley.

March 20th—Already come up, 1½ to 2 inches long.

May 16th—The crop is very luxuriant, a good many ears appeared.

* This was two-headed barley.—The hexagonal barley does not reproduce in the same manner.

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July 19th—A good deal is now ripe: a few fine days would ripen the whole.

August 14th—Ripe part (on the poorest land,) cut; yielded, when well dried, at the rate of 90cwt. 1qr. 13lb. per acre of straw and ears.

August 15—The remainder of the acre cut down. It was in a mixed state, of ripe and unripe corn: at this rainy and unfavourable season of the year, there could be no hope of ripening.

September 1st—That part of the crop which was ripe, consisting of 52 sheaves) was this day threshed. It was the produce of 5286 square links, weighed 162 pounds of clean corn: this is at the rate of 63¼ bushels (of 48 pounds) per acre.

The straw, after threshing, weighed 278 pounds; or at the rate of 5259 pounds; but as a good deal was wasted in carrying it several times from the field under cover, on account of the rains, the produce may be very fairly taken at 65 bushels, and the straw at 2½ tons per acre. The land was good; but the above experiments are wholly without manure.

Wheat Experiment, 1810.

March 15th—Sown.

March 20th—Already come up, 1½ to 2 inches long.

May 31st—Although not yet in ear, the crop has a very luxuriant appearance.

June 14th—A few ears appear—remarkably promising crop.

July 19th—Still green.—Ears long, but not filled.

August 14th—Cut two square rods as green fodder; produce weighed 294 pounds, say 300, including gleanings, would be 24,000 pounds, or more than 10 tons per acre.

This wheat and the preceding barley experiment were sown at the most unfavourable season of the year: for there could be little

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hope of its arriving at maturity; but in making experiments with a view of acquiring knowledge, all seasons should be tried. The proper season, however, for sowing is about July or the middle of August, as the crop would arrive at maturity in December, when the weather is usually dry and warm; but if intended to be cut as a green fodder, to meet the low state of the grass lands in the month of March, I should prefer sowing about the beginning of November, and cutting it whilst green, which would secure the after crops; because if cut in the dry season of the year, when in a perfect state of ripeness, the sap in the stems, being wholly evaporated, it would require a considerable deal of rain to carry on the process of further vegetation.

The following extract from my journal was written at the moment I was under this impression; it relates to another experiment.

February 28th, 1810—"The wheat sown on the 9th of November is now in full ear, both in the seed-bed and in the adjoining plot, to which some had been transplanted on the 20th of December. This experiment is very satisfactory; it proves how very advantageous, at this dry season, it would be to have green crops of wheat, barley, and oats, with a view of averting the fatal consequences of a dry season. The grass at present is much burnt up; and the cattle begin to feel the effect of the drought. Fodder of wheat, barley, or oats, would be very serviceable; and might be had in succession, by sowing the seed during the months of October and November."

In the course of my observations upon the opinions of the landholders respecting the extermination of the goats, as well as in a minute, and some notes published in the Laws and Ordinances, I have given such hints for the improvement of the island as I can with confidence recommend, because they are the result of

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more than two years experience in the culture of corn of all sorts, of esculents, and a variety of trees, shrubs, &c. &c.

It is indeed not to be wondered at if some of my notions upon improvements, may be by some considered as chimerical, particularly by persons who have never in their lives seen a field of corn, and who have not even had the curiosity to look at the luxuriant crops which have been already raised on the Plantation-house and Long Wood farms. Such persons assert that the best modes of cultivation must be those which their own experience and that of their forefathers have taught them; and they add, that what may do well in England, cannot succeed in this island, on account of dry seasons, a want of labouring population, and such like excuses, for adhering to a system of management, which has been, and ever will be, if continued, most ruinous, both to themselves and to the Honourable Company.

If what I have recorded in the above-mentioned papers had been merely matter of opinion and judgment, there might have then been some plea for opposing new plans. Is it wise, or reasonable, pertinaciously to persist in their old modes of husbandry, when it has been incontestibly proved, from facts, that an entire change of system would not only be of the most important benefit to this place, but would also save the planters, in future, such losses in cattle, as they have hitherto sustained in seasons of drought, as well, as at those times when the rains have only in a partial degree failed?

Being extremely anxious to impress on the minds of the planters, the infinite advantage which would proceed from a spirit of exertion and industry being once excited, I have already taken a general view of the effects that might be expected to result, in pages 30, 31, and 32 of the Laws and Ordinances. I shall, therefore, confine my present observations to a subject which

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they themselves have always considered equally important to their own interests, as it is to the original intention of maintaining this establishment.

At the present moment the summer heats have burnt up all the pastures to the eastward of the island.* I went yesterday and inspected those at Long Wood, and was astonished to find them so exhausted and bare. It is, however, by no means difficult to explain the causes; for those grasses are as old as the island; where they are eaten down there is no appearance, at present, of re-production; and where cattle have for many months been excluded, the old wire-grass is become tufted, and as dry as thatch, with naked intervals between; moreover many places are mossy; and the whole extent of the pastures is hide-bound.

In some part of what is called the *Gut*† (where the ground had been loosened and stirred) even, at this dry time of the year, are most luxuriant patches of fine, young and tender grass.—The same may be seen at Plantation-house. Thus nature points out a very simple process for improving any of the pasture lands in this island.

The best writers on agriculture have most clearly demonstrated the fertilizing effect which is produced by the atmosphere, upon lands prepared to admit its influence. The earth in its natural and compact state can receive no benefit of this kind; for if the rains are copious, particularly on the declining surfaces of St. Helena, they run off as fast as they fall, and if not, the compactness of the surface prevents their sinking more than an inch deep; so that they are exhaled by the first hot sun—and consequently they can leave little or no improvement. If, however, the soil were loosened to the depth of nine or ten inches by the plough, it is

* November 29, 1810.

† The low ground which formed the lower garden at Long Wood.

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evident that the rains, or moisture, from the atmosphere, would generally penetrate beyond the reach of the powerful heats. Thus a sufficiency of moisture would be secured for the purposes of vegetation; and when young grass, or any other crop, shall have covered this surface of the soil, it would be a further security and protection in retaining the moisture.

It is evident therefore, that ploughing the old pastures, and raking out the old roots, or tufted grass, and burning them, and then harrowing the lands, will be a vast improvement, particularly in those parts of the island which are the soonest affected by the absence of rains.

This mode of improvement, which could not be costly, after a little practice in ploughing, would evidently be the best means of securing good crops of grass, and thereby averting the effects of seasons of drought.

In confirmation of what I have already stated, in pages 24 to 28 of the Laws and Ordinances, upon the advantages of raising green corn crops for feeding cattle, I will here relate the complete success which has attended Colonel Broughton's experiment at Long Wood.

About ten acres of oats were sown on the 1st of August, 1810, and although there has been very little rain since that time, the crop is green and beautiful; whilst all the pastures have been severely afflicted by the heats. The corn is now about three or four feet high, very thick and just coming into ear. Colonel Broughton, Mr. Porteous, and myself, had yesterday in our presence cut down a square rod (that is, a square 16½ feet). This produce of exceeding fine fodder weighed 227 pounds, which multiplied by 160 (the number of square rods in an acre), gives 36,320 pounds, or 16 tons and a quarter per acre. The whole of the crop in its present green state, is immediately to be cut

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down, hayed and stacked, and given to the cattle; and I have every reason to believe, from several experiments I have made, that in six or eight weeks there may be a second crop, not much inferior to the first: but supposing it to be a half, this would be, in six months from the day the seed was sown, not less than twenty-four tons of fodder from one acre! and let any planter compare this with the produce of his grass lands, and duly consider all I have already stated on this important subject, and he cannot fail to admit, if he will allow his reason to operate, that eminent and great advantages would infallibly result from the introduction of agriculture on this island. It is the unanimous opinion of Colonel Broughton, Mr. Porteous, and myself, that an acre of this green fodder will yield in nourishment for cattle, more than any hundred acres of the Long Wood pastures in their present condition.

It must be evident, from the foregoing experiments and observations, that agriculture at St. Helena would be eminently successful. Its importance was early foreseen by the Court of Directors; but the obstacles which long opposed its general introduction (I mean the want of proper enclosures and the perpetual trespasses of goats and sheep) have been suffered to remain, and no extensive encouragement has ever yet been held out to the cultivators. They were told to feed themselves and not to depend upon England for provisions; and, whilst they were strongly urged upon these points, their efforts soon relaxed in proportion as they were afforded an easy means of purchasing every necessary of life from the Company's stores, at prices much under those at which they could raise them.

The Planters are not aware that a want of industry, and this mode of supply are the very causes that exhaust their substance; and that the import of any sorts of provisions, however low in

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price, which can be raised on the farms, is an evil which operates against their best interests. The labour of their slaves and servants is never fully exerted: much of their time is squandered between the farms and James's Valley, where they acquire habits of vice and idleness; and the attention of the master has been, from the causes above stated, unwarily withdrawn from those pursuits which could alone improve his condition: and particularly in a place where there is neither commerce nor manufacture.

The extent of cultivation has hitherto been barely sufficient for a scanty supply of refreshments to the shipping; and this has been far less than in former times. In 1789, the quantity of fresh provisions and vegetables furnished to the shipping, was about three times more than in 1809, because the prices were moderate, and not more than about one-third of those of the present time.* The total value of exported produce to the shipping, in 1789, was £6569..1..11 and in 1809, £6346..10..6. Hence it is proved that the Planters receive less than they did twenty years ago; whilst the rest of the community and the shipping are exposed to great inconvenience and expence, proceeding from this limited scale of cultivation, and from the decline of industry at the farms.

It is not in the nature of things, that if the value of the annual produce of the farms be less than that of provisions purchased by

* *Comparative Prices of the following Articles, sold from the Farms in* 1789, *and* 1811.

	1789.	1811.
	L. s. d. *L. s. d.*	*L. s. d.* *L. s. d.*
Beef, per lb. -	0 0 6	0 1 2
Pork, per lb. -	0 0 6	0 1 3
Sheep, each -	1 1 0	2 0 0 to 3 0 0
Turkies, each -	0 5 0 to 0 8 0	1 12 0 to 2 2 0
Geese, each -	0 6 0	1 1 0 to 1 5 0
Ducks and Fowls, each	0 1 6 to 0 2 0	0 7 6 to 0 12 0

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the planters, that there can be any balance at the end of the year in favour of the farms. That this must be the fact, appears from a view of the annual purchase of provisions from the stores. In 1809, £3540. was paid for beef and pork; about £5000. for flour; and £3000. for rice and paddy; in all, £11,540. (exclusive of spirits and other articles.) I have before stated that the exported produce of the lands was only £6346.

Now, if the above sum of £11,540. could be diverted into the hands of the planters, (and that it is possible, by means of common industry, cannot be questioned) what an improvement would it make in their condition, as well as that of other individuals on this island? But even much more than this might be done, by favouring and encouraging agriculture. Every one admits that the soil in many places, is excellent; and the climate is such, that the powers of vegetation seem never at rest. What then is wanting to make the lands productive but industry and a skilful direction of the labour of the island? One hundred and twenty acres would furnish the island breweries with about 700 quarters of malt, which, according to an estimate in my possession from one of the brewers, would cost, if imported from England, about 6 or £7000. One hundred and thirty acres of wheat, rating the produce at 35 bushels per acre, would yield 4550 bushels, equivalent to 204,750 pounds of flower, and 68,250 pounds of pollards. The value of these at the English prices of what are sent here, may be fairly rated at £4000.; and, supposing that no more than 120,000 pounds of fresh pork were to be annually supplied to the garrison from the farms, this, at one shilling a pound for the dead weight, would be £6000. and the whole of these sums would create an addition of £28,040. to the present exported produce; making a total of about £34,000. a year, for products that might be in constant demand from the farms of St.

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Helena whenever they shall be able to supply the articles above enumerated.

Moreover, the quantity of straw produced from 250 acres of corn may be rated at 500 tons, which would not only be a valuable acquisition of fodder, but would also afford large quantities of manure for the improvement of the lands. For both these purposes it would be extremely valuable, where the price of hay has been from £10. to £12. a ton.

Here, I have supposed no more than 250 acres annually in the cultivation of corn. This is only one acre in twenty-four of the 6000 acres of free and lease lands, and could be no very arduous task to cultivate, if a proper spirit of industry were once excited amongst the Planters, and if the labour of their slaves and servants were properly directed.

If lucerne, Guinea grass, silla, mangel wurzel, were added to the above supplies of corn, together with a more extensive culture of yams and potatoes, it must be evident that the greatest improvement might be expected, and that the whole together would soon render St. Helena abundantly productive of those necessaries of life for which the inhabitants have been, during the last 60 or 70 years, almost wholly dependant on other countries, a dependence which has cost the Honourable Company many hundred thousand pounds; whilst the planters, so far from having derived the smallest benefit, have lost sight of their real interests; and by relying upon the certainty of provision, they naturally became less industrious, because the necessity of labour no longer existed.

20th September, 1810.

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SECTION XIV.

Observations upon the Rainy Seasons, from the year 1711 *to* 1811—*Notices on the Fall of heavy Rains, fine Showers, and drizzling Rain, from the* 1*st of January*, 1806, *to the* 31*st December*, 1811—*erroneous Notions upon the Effects of heavy Rains at St. Helena; sometimes damage the low Grounds, but always favourable to cultivated and pasture Lands. Abstract of the Fall of Rain from February* 1811 *to February* 1812.

It is generally believed by the oldest inhabitants of St. Helena, that rain of late years, has fallen in less quantity than in former times: and the cause is imputed to the diminution in the number of trees. This is no doubt a plausible conjecture; since it is admitted that trees have a power of attracting clouds, as well as moisture from the atmosphere: but whether any change has actually taken place is a point that cannot now be ascertained; because there is no record whatever of the fall of rain.

There are, however, upon the consultations, and in letters from the Governments of St. Helena to the Court of Directors, several passages that tend to throw some light on the periods at which the rainy seasons formerly set in, as well as some notices of unusual falls of heavy rain; both during the seasons of rain, as well as in the dryest months of the year.

The following are the passages and notices I have selected.

1711. January 23d.—"This is deemed the proper season for planting."

1714. November 12th.—"On the 3d February, 1713, the floods carried away part of the west curtain, and damaged other places."

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1719. May 5th.—"Great floods descended from the hills; supposed to have been occasioned by a water spout."

1734. April 3d.—"At this time the rains have ceased."

1735. March 29th.—"We have had a good season: the rains set in on the 1st February."

1736. January 29th.—"The weather still continues very dry."

1737. January 27th.—"Our summer rains began on Christmas day."

1743. February 1st.—"The late rains have damaged the store house."

1747. April 11th.—"Unusual drought for several months past."

1753. August 27th.—"Great damage has been done by the late heavy rains."

1754. February 11th.—"Rupert's and Banks's fortifications have received damage by the late heavy rains."

1756. June 20th.—"A heavy fall of rain on the 19th instant did great damage."

1763. June 6th.—"Great damage to the fortifications, by the late violent rains.

1774. June 25th.—"The rains have done great damage to the fortifications at Sandy Bay."

1781. March 5th.—"The fortifications at Sandy Bay sustained great damage by the late rains.

1787. March 28th.—"The leeward defences suffered greatly by the floods."

1789. March 24th.—"The late flood has damaged the fortifications at Sandy Bay."

1797. April 27th.—"Great damage was done to the fortifications by the floods."

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1809. March 4th.—Heavy rains that fell in the short space of one hour, damaged the road upon Ladder hill, overflowed the water course in James's Town, and damaged several houses.

1811. February 22d.—" Heavy rains overflowed the water course in James's Town, and damaged some houses; as well as some plantations in Sandy Bay."

These passages will shew that the rainy seasons were expected, and usually set in much about the same periods as in later times; that is in January, or February; which are called " the summer rains," and in June and July " the winter rains."

So far, therefore, as relates to the times of the rains setting in, there seems to have been no difference: but the floods that happened on the 5th of May, 1719, and on the 6th of June, 1763, are rather remarkable; for the first was entirely out of season, and the latter was much earlier than the rains usually set in.

In the preceding extracts I have given every record I can find of damages sustained by the heavy rains; and by those it appears, that the fortifications of James's Town, Rupert's Valley, Banks's, and Sandy Bay, and some plantations in the low grounds, have all occasionally been subject to great damage.

It seemed to me, before I left England, that some vague accounts of these floods, and of the great damage done by them, had gone abroad, and had led to very inaccurate conclusions; for it was a generally received opinion that there would be much risk in loosening the soil of St. Helena, for the purposes of agriculture: as it would be liable to be washed away by such violent torrents of rain as had frequently happened.

But those who entertained such erroneous notions could never have been informed of the real causes of the damages they had heard of: nor could they have known that these damages had been partial, confined merely to the bottoms of valleys or ravines,

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and particularly to the mouths of the vallies, where the torrents descending from naked and steep sides of the mountains, had accumulated, and were forcing a passage into the sea. This was evidently the case at all the four places above-mentioned.

At each of those places during those severe floods, the rains that fell upon the upper surface of the ravines, which extend half a mile and upward across, and penetrate from two to four miles inland (and to which many small branches communicate) must have been immense; and the force of the accumulated waters when confined in narrow channels in the low grounds, must have been irresistible. It is to these circumstances that may be justly ascribed the devastations that have taken place: but such evils can never occur upon lands laying upon a gentle declivity, and so situated, as to receive only those rains that fall perpendicularly upon them. Even three or four inches of rain, falling in one day upon fields of this description, (and particularly if they are ploughed) so far from doing injury, would undoubtedly be of the greatest advantage—because the loose soil by readily absorbing every drop of rain, would long retain the moisture—and consequently promote vegetation.

There are betwixt two and three thousand acres of the above description on this island; which I have no hesitation in declaring might be broken up with the greatest safety—and made to yield excellent crops of potatoes, mangel wurzel and corn—from which the supplies of vegetable and animal food, would become abundant—and the inhabitants might very soon be relieved from their present dependence on foreign imports.

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ABSTRACT *of a Meteorological Journal at Plantation-house, from the* 1st *of January* 1806 *to the* 31st *of December* 1811; *shewing the number of Days of Heavy Rains, Fine Showers, and Drizzling Rains, in each Month during that period.*

MONTHS.	1806.				1807.				1808.				1809.				1810.				1811.				Total days rain in 6 years.	Average of days rain per month.
	Heavy Rains.	Fine Showers.	Drizzling Rain.	Total.	Heavy Rains.	Fine Showers.	Drizzling Rain.	Total.	Heavy Rains.	Fine Showers.	Drizzling Rain.	Total.	Heavy Rains.	Fine Showers.	Drizzling Rain.	Total.	Heavy Rains.	Fine Showers.	Drizzling Rain.	Total.	Heavy Rains	Fine Showers.	Drizzling Rain.	Total.		
	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days	Days
January	2	5	6	13	4	2	2	8	0	4	4	8	3	1	2	6	2	3	6	11	0	4	10	14	60	10
February -	5	4	5	14	4	6	4	14	4	3	2	9	2	2	3	7	1	3	2	6	2	6	6	14	64	10
March -	7	6	6	19	6	7	5	18	4	4	4	12	3	1	3	7	5	6	6	17	5	8	6	19	92	15
April -	3	4	3	10	3	6	3	12	2	6	7	15	1	6	1	8	2	5	3	10	0	2	11	13	68	11
May -	3	5	5	13	2	3	3	8	5	5	5	15	1	3	5	9	8	3	6	17	2	4	9	15	77	13
June -	4	5	5	14	1	0	3	4	0	3	3	6	1	1	5	7	2	3	5	10	2	1	4	7	48	8
Total 6 Months	24	29	30	83	20	24	20	64	15	25	25	65	11	14	19	44	20	23	28	71	11	25	46	82	409	
July -	3	2	2	7	1	3	0	4	1	4	5	10	3	4	1	8	6	2	2	10	1	4	8	13	92	15
August	6	7	6	19	3	5	5	13	4	3	10	17	5	6	4	15	4	5	4	13	2	2	5	9	86	14
September	2	1	3	6	2	8	10	20	0	2	8	10	2	4	8	14	1	3	4	8	1	5	9	15	73	12
October	1	3	2	6	1	5	5	11	0	1	6	7	3	5	9	17	2	3	12	17	1	4	12	17	75	12
November	2	6	8	16	1	3	4	8	0	2	4	6	4	4	3	11	1	4	5	10	0	0	7	7	58	9
December	1	5	5	11	0	3	5	8	0	1	8	9	0	6	6	12	2	2	8	12	2	2	4	8	60	10
Total 6 Months	15	24	26	65	8	27	29	64	5	13	41	59	17	29	31	77	16	19	35	70	7	17	45	69	404	
Total 12 Months	39	53	56	148	28	51	49	128	20	38	66	124	28	43	50	121	36	42	63	141	18	42	91	151		

This ABSTRACT is formed from 1806,—to the 4th July 1808—and continued from that date, according to my own observations.

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Upon an average, the number of days, throughout the year, on which rain falls, is 135. The wettest months are usually January, February, and March; and July and August.

As wet or dry seasons depend on heavy rains and fine showers, the following is a comparison of the six years:

1806,	heavy rains and fine showers,	-	92 days.
1807,	ditto	ditto - -	79 days.
1808,	ditto	ditto - -	58 days.
1809,	ditto	ditto - -	71 days.
1810,	ditto	ditto - -	78 days.
1811,	ditto	ditto - -	60 days.

Now, as my measurement of the fall of rain, from the 22d February 1811, to the 21st of February 1812, inclusive, gave 22,4 inches, and this in one of the driest seasons in the above comparison, it may be presumed that in wetter years the fall of rain at St. Helena exceeds that in London, and in several other places in England.

"Rain falls—At London, being the average of the following years, 1774, 5, 6, 7, 8, 9, 80; 1789, 90, 91, 92 Inches 21.25

"Upminster - - - -	19.125
"Lincolnshire, in medium season - -	18
"Ditto, extreme wet - - -	24
"Liverpool - - - -	34.5
"Townley, in Lancashire - - -	42.5
"Kendal, in Westmoreland - -	61.25
"Dumfries, in Scotland - - -	36.25
"Glasgow, ditto - - - -	31"*

In India, there is a remarkably striking difference between the seasons of rain, and at St. Helena. According to an exact measurement, taken at Madras, by the late Benjamin Roebuck, Esq.

* Vide Philosophical Magazine, p. 79, Vol. XV.

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from the year 1791 to 1803, it appears that the fall of rain from the beginning of January to the end of May, is so trifling, as scarcely to affect the rain-gage. Indeed, during the month of March, not a drop of rain fell in the period of thirteen years. There were moderate showers during June, July, August, and September; and heavy rains fell in October, November, and December. But at St. Helena, excepting in very dry seasons, there are usually some heavy rain, fine showers, or drizzling rain in every month of the year.

The natives of India provide for their dry months, by retaining the monsoon rains in tanks or reservoirs, several miles in length: which serve for their crops until the rainy season returns.

Abstract of Mr. Roebuck's account of Rain which fell at Madras, from 1791 *to* 1803, *inclusive.*

Average fall of Rain in each Month during Thirteen years.

	Inches.		Inches.
January	0.7	July	2.6
February	0.5	August	2.5
March	0.0	September	4.4
April	0.4	October	9.0
May	0.3	November	18.3
June	2.0	December	8.1

The average fall of rain was 49.3 inches per annum. It sometimess happened in the month of November, after unceasing rains, that the quantity which fell during 24 hours, measured 7 inches.

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Abstract of the fall of Rain at Plantation-house, from 22d Feb. 1811, to 21st Feb. 1812.

1811.	In. 10ths		In. 10ths
February -	1 5	August - -	1:6
March -	4:6	September -	1:8
April -	0:5	October - -	1:5
May - -	2:4	November -	0:1
June - -	2:2	December -	1:2
July - -	1:6	1812.	
		January - -	0:8
	12:8	Feb. to 21 -	2:6
	9:6		9:6
Inches	22; 4 Total fall of rain during 12 months.		

This is less than it actually was—because evaporation is very considerable here—and no allowance is made for what unavoidably took place upon an open surface, 9 inches in diameter. Being now provided with proper apparatus, which receives the rain through a small tube into a bottle, the present year's measurement will be far more accurate. I consider, that if evaporation had been prevented, the last year's measurement (even in what was reckoned a dry year) would have been about 24 inches—instead of 22:4.

24th Feb. 1812.

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SECTION XV.

On the Culture of Barley Wheat—Produce, per Acre—The tenth Part of an Acre, dibbled, yielded 405 for 1—Deductions which prove that from 5⅓ Ounces of Seed, 900 Bushels of Corn might be produced in nine Months at St. Helena—successful Experiment in Malting and Brewing from Island Barley Wheat.

In the St. Helena Register for November, 1811,* I have given the progress, and result at that time, of two experiments in the culture of naked barley, or barley wheat; and in that for December (page 32), are added some further observations upon this excellent corn. On the 17th of December, I superintended the cutting of two square rods of the second crop; the produce of which being 12 sheaves, is at the rate of 960 sheaves per acre.

The remainder of this crop was reaped some days after, and the total number of sheaves was 1100.

To simplify calculations, eleven only (being the 100th of the produce) were thrashed on the 4th January, 1812. They yielded of clean corn 46 pounds, and of straw 45 pounds: but as the operation of thrashing, for want of a barn, was performed in the open air, upon a temporary wooden floor: as a good deal was lost by getting over the thrashing-boards, among the grass; and as the grain was not entirely separated from the straw, it may be fairly reckoned that not less than two pounds of grain were lost: wherefore the produce of clean corn and straw from eleven sheaves should stand thus:

Of clean corn, - - -	48 pounds
Of straw, - - -	45 ditto

* Vide Section XI.

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The total produce, at this rate, from 1100 sheaves, would therefore be,

Of clean corn,	-	-	4800 pounds
Of straw,	-	-	4500 dittò

It will be found upon calculation, that this produce per acre is 4189 pounds of corn,* and 3927 pounds of straw.

This is no more than a return of 35 for one; but it must be observed that this crop was sown broad cast; a good deal was destroyed by the grub, and by canary birds; and many grains, laying on the surface, had not vegetated.

The value of the above crop, rating the barley wheat at twopence per pound, and the straw at £5. per ton, is £43..4..2. per acre, which is inferior to a potatoe crop at 8s. per bushel; because 200 bushels at one crop would be £80.: yet if potatoes be rated at 4 shillings, and if the advantage of obtaining manure be considered, the barley wheat crop will be found equivalent to that of potatoes.

The small experiment which preceded this crop was *dibbled* on the 16th of March, 1811; and gave a much greater return: five and one-third ounces was the quantity of seed. After the produce was reaped, I inspected the stubble, and it appeared that not a single grain of the seed had failed. The produce from those five and one-third ounces was 135 pounds, or 2160 ounces, which is 405 for one. If therefore these 2160 ounces had also been dibbled, and with the same success as in the first experiment, the result would have been $2160 \times 405 = 874800$ ounces, which divided by five one-third ounces (the first seed,) gives a return from the two crops of 164127 for one. Hence it is not impossible, under the circumstances of the first crop, from the five one-third ounces of seed dibbled on the 16th March 1811:

* Because if 11 sheaves yield 48 pounds of grain, 960 sheaves should yield 4189 pounds.

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supposing its produce had also been dibbled, instead of broadcast, on the 3d August, that from the second crop about the middle of December, there might have been a return of 54675 pounds, equivalent to about 900 bushels, from not more than three common sized wine glass full of seed grain: and this within the short period of nine months, that is, from sowing the first to the reaping of the second crop.

Nothing can tend more to develope the capabilities of this soil and climate, than investigations of this nature. Let these deductions be carefully examined; and every one may satisfy himself whether or not they are consonant to fair reasoning, and let it be considered that the first experiment, on which these deductions are founded, was on land unmanured, and the natural inference must be, that it is practicable at St. Helena (although not in any country in Europe), by due care and attention, to effect even a larger produce from barley wheat, than what has been deduced from the line of argument I have pursued.

I have peculiar satisfaction in adding, that the barley wheat of the December crop has yielded an uncommonly sweet and high flavoured malt, from which Mr. John Onions (who well understands Shropshire brewing) has made some ale, equal in quality to the best I ever tasted in that country. His success is indeed the more surprising, as he laboured under the disadvantages of malting upon a very small scale, and with a temporary apparatus for drying. Wherefore from all that has been stated, I trust it has been distinctly proved, that by means of the common practice of husbandry in England, the island breweries here might be supplied (I will venture to say) with island malt, of a fresher and superior quality, and at a much less expense, than that which is imported from England.

23d March, 1812.

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SECTION XVI.

General Observations on Green-fodder Crops—would prevent Losses of Cattle in Seasons of Drought—One Acre equivalent to Fourteen Acres of the best Pastures—Indian Corn, or Maize, cultivated in France, and at the Cape of Good Hope, as Cattle Fodder—Its produce at St. Helena, in less than Four Months from the Period of Sowing, was Thirty Tons per Acre. Remarks on the Culture of Kidney Beans—Green-fodder Crops of these recommended.

THE introduction on this island of green crops of fodder, for the sustenance of cattle of all kinds, is a subject I have frequently adverted to in several papers that have been issued from the St. Helena press. I have there shewn the great advantages that would be derived from imitating a practice—which has been long and successfully established in almost all countries in the world—but which, until lately, had never found its way to this island.

I shall not recapitulate what may be found in those papers—it is indeed unnecessary: for the facts I am now to relate, without any reference whatever to my former statements, ought to be sufficient to impress on every unbiassed mind, the importance of green-fodder crops, which I trust every cattle breeder here will duly consider: their introduction upon an enlarged scale would undoubtedly be the very best means of securing his own interest and of promoting the general welfare of the island.

By the introduction of cattle crops, I have formerly shewn how easily those evils which had frequently occurred, might have been

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alleviated—if not wholly prevented. It is well known what heavy losses in cattle have been sometimes sustained in seasons of drought: but, as it has been ascertained, that corn, when once fairly established (even during unseasonable or scanty rains) soon covers and shades the soil from the sun's heat, and from the drying winds—and that it advances to maturity, even in the driest weather; it would be absurd to say that the common precautions used in other countries to provide food for cattle, and to avert calamities among them when the pastures fail, would *not* succeed equally here as elsewhere. Nay, I have no hesitation in declaring my opinion that this species of husbandry, as well as every other would succeed; and prove even more profitable to St. Helena cultivators than it is to English farmers—who can have only one crop in the year: because, as vegetation here is never obstructed by frost and severe winters, two certain crops may be secured annually, if due attention be paid to the proper seasons of putting them in the ground.

Confident as I feel in those opinions, which are founded upon the basis of the most accurate experiments, I have been not a little astonished at the pains which I find have been lately taken to impress on the minds of several gentlemen in the direction for the affairs of the East India Company, the total impossibility of introducing agriculture at St. Helena. Those who have declared such sentiments could have known but little of the ample returns, and unexampled profits, which have been derived here, from lands brought into cultivation. There are now in England two gentlemen (Lieutenant Colonel Greentree and Mr. Dunn), who can readily correct such erroneous assertions. They have both had considerable experience in improving their lands—and they assured me, as I stated, in a letter to the Court of Directors, dated the 10th of October 1809—"that in bringing land into

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cultivation they have been always reimbursed the whole expense by the first year's produce."

Is it possible to imagine, in any country, a greater incitement to industry, and to extensive agriculture?—Or can there possibly be a stronger proof of the fertility of the soil, and of the certain advantages that are within the reach of every industrious landholder? It has long been my belief that nothing but common exertion, and a proper system of farming, are wanting to make St. Helena productive of almost every necessary of life for its inhabitants. There are at least two or three thousand acres of excellent land capable of the highest degree of improvement, which might be appropriated to this laudable purpose; and as I have already observed, that two crops a year are attainable from those lands, they would be in fact equivalent to almost *double* that extent in the northern climates. The following detail of experiments will tend to illustrate these observations.

Green Fodder from Oats.

On the 5th of February last, some oats of a long thin sort, received from the Cape of Good Hope, which weighed no more than 31 pounds per bushel, were ploughed in upon about two acres of some good land at Plantation-house, at the rate of two bushels per acre. They were later in coming up than usual, on account of there having been very little rain—for it was not until the 20th that a good many of the young plants appeared. Some fine showers however, early in March, succeeded by heavy rains during the remainder of that month, speedily gave the crop a very exuberant appearance:—By the 6th of April a few ears were seen; and on that day, after a lapse of two months from putting the seed in the ground, we began to cut the crop for the purpose of green fodder. Mr. Breame, an experienced Norfolk farmer,

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who manages the Company's farms here, declares he never beheld in so short a time after sowing, so weighty a crop. It was my intention to have ascertained the weight at *two months*; but on account of drizzling rains, which would have added to the weight, I postponed it until the 9th of April; when the crop was dry: and in presence of Doctor Baildon, Mr. Breame, and some others, a square rod was accurately marked out—the produce of which weighed exactly 200 pounds avoirdupoise; this is at the rate of 32,000 pounds, or 14¼ tons of fine green fodder per acre. This, in the short period of 64 days from sowing the seed, is a large produce; although probably not so much as it may weigh when farther advanced. It is my intention to ascertain the weight of the produce of this crop of green fodder, at three and at four months growth, conceiving that such trials might lead to useful deductions.

In order to form a comparison with the produce of grass land at the present time (and immediately after the most favourable rains since my arrival in 1808) I marked out a square rod on the lawn in front of the Plantation-house, which is as good as most of the best pastures, and had the grass mowed—the produce weighed only 12½ pounds—or at the rate of 2000 pounds, or less than one ton per acre. Consequently one acre of green fodder corn *in 64 days from the seed*, is equal to the produce of 14 acres of the best pastures.* But this is not all—a crop of green fodder may be *secured* almost at any season; whereas, it sometimes happens, in the months of November and December, our driest and hottest season, that one hundred acres of pasture lands would not yield a single ton of grass. Compare also the short time required, for a beast to take his full feed of green corn, with the

* Colonel Broughton's Experiment at Long Wood, in November 1810, yielded 16¼ tons per acre. See Section XIII.

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many hours necessary in vainly attempting to fill himself on parched and bare pasture lands. In the first case the animal would soon be satisfied, and might go to sleep: but in the second he must necessarily waste the whole day in wandering over many acres, until he is wearied—and after all he must lay down almost famished: this is the fate of many poor neglected animals on St. Helena; who are left to provide for their own wants; and of which but too many indeed often perish for want of assistance, and sufficient sustenance.

Indian Corn, or Maize.

It appears by the *Statistique générale et particulière de la France,* that this grain is cultivated in several of the departments with a view to fodder the cattle—and, when ripened, it is used for feeding poultry, &c. Lord Caledon informed me, when he visited this island in July 1811, that he always used it at the Cape of Good Hope for his carriage horses, and had found it to be extremely nourishing. At that time I had a small patch, measuring 44 by 33 feet, which was then grown to the height of about eight feet—and in seed. It had been dibbled three inches deep, and three seeds in each hole (as many of the seeds were bad) on the 6th of April 1811. On the 17th it had come up well, and afterwards grew luxuriantly. On the 30th of July I ascertained the produce of one square rod to be 425 pounds, which is 68,000 pounds, or 30 tons per acre. The seed had been 115 days in the soil; and although the lower parts of the stems were at this age rather hard, the whole was greedily devoured in the hoggery. But, as a green fodder for horses, or cattle, or for hogs, it would be better to cut it after two or three months from the time of sowing—when the stems will be soft, and more tender and juicy. In this state it would prove a very nutricious fodder—and I

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should suppose the produce might then be betwixt 20 and 25 tons per acre.

Black speckled Kidney Beans.

St. Helena formerly abounded with "bean grounds," of which traces are still to be seen: but of late years they have occupied only a place in the gardens. Their culture appears to me worthy of attention. Their growth is rapid—they are not liable to be infested with vermin of any kind—they thrive in almost all soils. In their young state they yield a very thick foliage, but not exceeding 18 or 20 inches in height from the ground—and they have abundance of long pods, fit for table use, or for cattle, hogs, &c. When ripe the bean produce is very great—exceeding ninety bushels per acre.

On the 31st of October last, observing that some black speckled beans, in the Plantation-house garden, (which the gardener had left for seed) had an extraordinary number of pods, I was induced to ascertain what might be the actual produce of an acre from such a crop, if sown in rows at one foot asunder. Accordingly on that day, 33 feet of rows were measured, and the beans carefully gathered, and taken out of the pods. I kept them in a dry place until the 20th December; when they were weighed; the 33 feet of rows yielded sixty six and one half ounces.

Now as an acre planted in the above manner, would contain 43560 feet of rows, the extent of 33 feet is the 1320th part—consequently this sum multiplied by $66\frac{1}{2}$ ounces gives the produce 87780 ounces, or 5486 pounds, per acre.

Having found a jug, that held $30\frac{3}{4}$ ounces of wheat, to contain exactly 30 ounces of beans, the weight of a bushel of those beans may be rated at 59 pounds; by which dividing the 5486 pounds, the produce thus deduced is 93 bushels per acre.

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This crop was sown on the 27th June 1811, and therefore had been 126 days in the soil. The drills in which the seeds were planted were three feet asunder; and the seeds were so close as to touch each other. This appeared to me injudicious—because the intervals between the rows exposed too much naked surface to the sun's rays, and the young plants coming up too thick must rob each other of nourishment, and consequently retard their growth. I therefore directed the gardener to prepare a bed for a different mode of culture.

I have found by experience that on this island, it is of much importance to make a crop cover the ground as speedily as possible. When this is effected, as the soil is shaded, the moisture cannot be easily exhaled—and every passing shower, as well as dews, are of great service; because they descend to the roots, and promote vegetation. On the contrary, the dews or light rains falling upon a naked interval, produce no effect upon the crop; for they are immediately taken up in the day by the sun's heat, and by the drying winds. This is the case even on those days when occasionally several drizzling rains, or light showers have fallen: and that these are of no real benefit may be observed by the pastures, where no improvement is seen until they have been well soaked by heavy rains.

In the bed, which was prepared, drills at 15 inches asunder were opened about three inches deep; and the beans put in at three inches from each other; they were then covered with the soil.

This experiment was begun on the 9th of January 1812. On the 19th the young plants were finely come up; and on the 20th of February there were some in blossom. They were uncommonly exuberant and strong—and had much larger leaves, and were in every respect greatly superior to an adjoining crop, sown nine

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days earlier—and treated according to the old practice here of crowding the seeds in the rows, and having wider intervals.

This new mode succeeded beyond my expectation. The crop in 42 days after sowing completely covered the soil, and was in excellent condition as a fodder for cattle. That cattle and horses and hogs will eat it has been ascertained—and it may be inferred they are even fond of it: for some cattle having lately broken into an inclosure, at Long Wood, devoured the *whole* of a small crop of this sort of bean.

On the 13th of March it is noted in my Journal "that many of the kidney beans sown on the 9th of January are now fit for gathering." At this age (about two months) they resemble French beans in the state they are used at tables in England, but are much larger. On the 9th of April (that is three months after sowing) the leaves of a great part of the crop had fallen off, the pods had withered, and the beans were full grown. This experiment proves that from black speckled kidney beans a weighty crop of green fodder might be obtained in *six weeks* from the period of sowing; and that in *two months* the pods and leaves had become an excellent and nutritious fodder; whilst the pods in their green state might supply abundantly the fleets that touch here with a vegetable at a moderate price, which would keep some time, and be highly conducive to the health of seamen after their long voyages.

The following is a concise view of these two crops of beans, and of three others that are now in progress.

EXPERIMENT, No. 1.

1811, June 27.—Sowed black speckled kidney beans—rows 3 feet asunder, and seeds very close in the drills.

October 23.—Cut 33 feet of rows—and collected the pods—their

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contents weighed 66½ ounces—this, if the rows be one foot asunder, is at the rate of 5486 pounds, or 93 bushels per acre. The beans in this state appear to be proper food for horses, or for feeding hogs; but being hard should be soaked in water or bruised.

EXPERIMENT, No. 2.

1811, Dec. 31.—Sowed several rows of beans very thick in the drills.

1812, Feb. 19.—The crop about 15 inches high, and in blossom, in 50 days.

April 12.—Not so well advanced at this time as No. 3, which was sown 9 days later: this proves the superiority of placing the seeds at some distance in the drills.

EXPERIMENT, No. 3.

1812, January 9.—Opened drills 15 inches asunder—beans sown 3 inches apart in the drills; and 3 inches deep.

January 19.—Finely come up.

February 20.—Blossoms appearing: this is 42 days after sowing.

March 13.—Many pods in a green state—fit for gathering in 64 days.

April 9.—Leaves withered and falling off—many pods fully ripe and fit for gathering in three months after planting.

EXPERIMENT, No. 4.

1812, February 22.—Sowed six rows 4 feet asunder: 3 inches from bean to bean in the drills.

April 4.—In blossom—luxuriant crop—18 inches high in 42 days.

April 10.—Observed a good many young pods in 48 days.

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April 12.—Cut 33 feet of rows—Produce 26 pounds. This being the 1320th part of an acre (if rows be one foot asunder) is at the rate of 34320 pounds, or 15⅓ tons of excellent green-fodder per acre, in 50 days after sowing the seed. During the growth of this crop, the season was unusually favourable—7$\frac{3}{10}$ inches of rain fell during the month of March.

EXPERIMENT, No. 5.

1812, March 3.—Sowed several rows of black speckled kidney, and several rows adjoining with the negro or black bean.

April 12.—Some of the black speckled are in blossom; in 40 days—the negro beans are not so strong nor so forward—season favourable—copious rains.

Since I closed the preceding statement of the *five Experiments* in the culture of kidney beans, I have this day (the 16th of April) ascertained the final result of No. 3, which was begun on the 9th of January last.

The leaves having entirely fallen, the pods being dry, and in a state of ripeness, 33 feet of rows were measured. The produce in clean beans weighed 54 ounces; which being from the 1320th of an acre, give the produce (rows one foot asunder) 71,280 ounces, or 4455 pounds, or very nearly two tons per acre. It will be perceived that the same length of rows in No. 1. produced, on the 23d of October, 1811, 66½ ounces:—but it must be observed that in No. 1. the quantity of seed sown was six or eight times greater than in No. 3. A jug that contained 30 ounces of No. 1. crop, contained very nearly 32 ounces of No. 3. crop, weighed at the time it was gathered: but No. 1. was not weighed until two months after being gathered. It is therefore probable, when No. 3. is also dried, that the same measure of beans will be of the same weight as the other.

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I found that 49 beans of No. 3. weighed one ounce—this is 784 beans to a pound: and, the produce of the 33 feet of rows being 54 ounces, must of course be 2736 beans.

Now, as an acre planted in rows one foot asunder, will contain 43,560 feet of rows, and as four beans are required to a foot (if placed in the rows three inches asunder), the number of beans required to plant an acre, in that manner, is 174,240, which divided by 784 beans in a pound is 222 pounds two-tenths, or very nearly four bushels. If a reference be made to the deduced produce, 4455 pounds, from No. 3, the return has been no more than 20 from 1 of seed beans. This indeed is greatly inferior to barley wheat, which, by dibbling, yielded a return of 405 for one!

From the preceding results it is clearly demonstrated that the most profitable culture of kidney beans is in green fodder crops. On the 12th instant, experiment No. 4, gave 34,320 pounds per acre of nutricious fodder, from seed sown in the proportion of 222 pounds two-tenths per acre; which is a return, *in weight*, of 150 fold; and this in the short period of 50 days, after putting the seed in the ground.

Mr. Jennings, the Company's gardener at Plantation-house, who has, for several years, cultivated beans of various sorts, assures me that the black speckled are superior to any other; they bear sooner, and yield a more weighty crop. At Lemon Valley, a warm and well sheltered place, not much above the level of the sea, he has obtained *six crops* in the course of one year, *from the same spot of land.* A reference to the preceding experiments will shew that this is very possible: but, supposing only four crops a year from the same land, and to be used as green fodder in the state of experiment No. 4, when it was cut on the 12th of April, and yielded 15⅓ tons per acre in 50 days, the total annual produce would be 60 tons, or 134,400 pounds from one

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acre of land. Now, if 50 pounds a day were allotted to each beast, there would be 2688 rations, or sufficient to feed *seven beasts* during the year, from one acre of beans.

Deductions of this kind are so far useful that they point out *capabilities*; and, in the present case, clearly shew what might be accomplished at St. Helena, whenever a proper spirit of industry shall have been excited, and the practice of husbandry generally introduced. Many people here may possibly assert that such things are impossible, "*because they have never seen them:*" but unbiassed minds, when *they* see facts opposed to bare assertion and opinion, can never be at a loss in deciding upon points of this nature.

When to the preceding details, respecting green-fodder crops, are added all that may be seen in the Laws and Ordinances, Goat Papers, and St. Helena Registers, upon my experiments in the culture of corn, and particularly of barley wheat, a judgment can easily be formed, whether or not it be practicable to succeed in agriculture on this island.

16*th April*, 1812.

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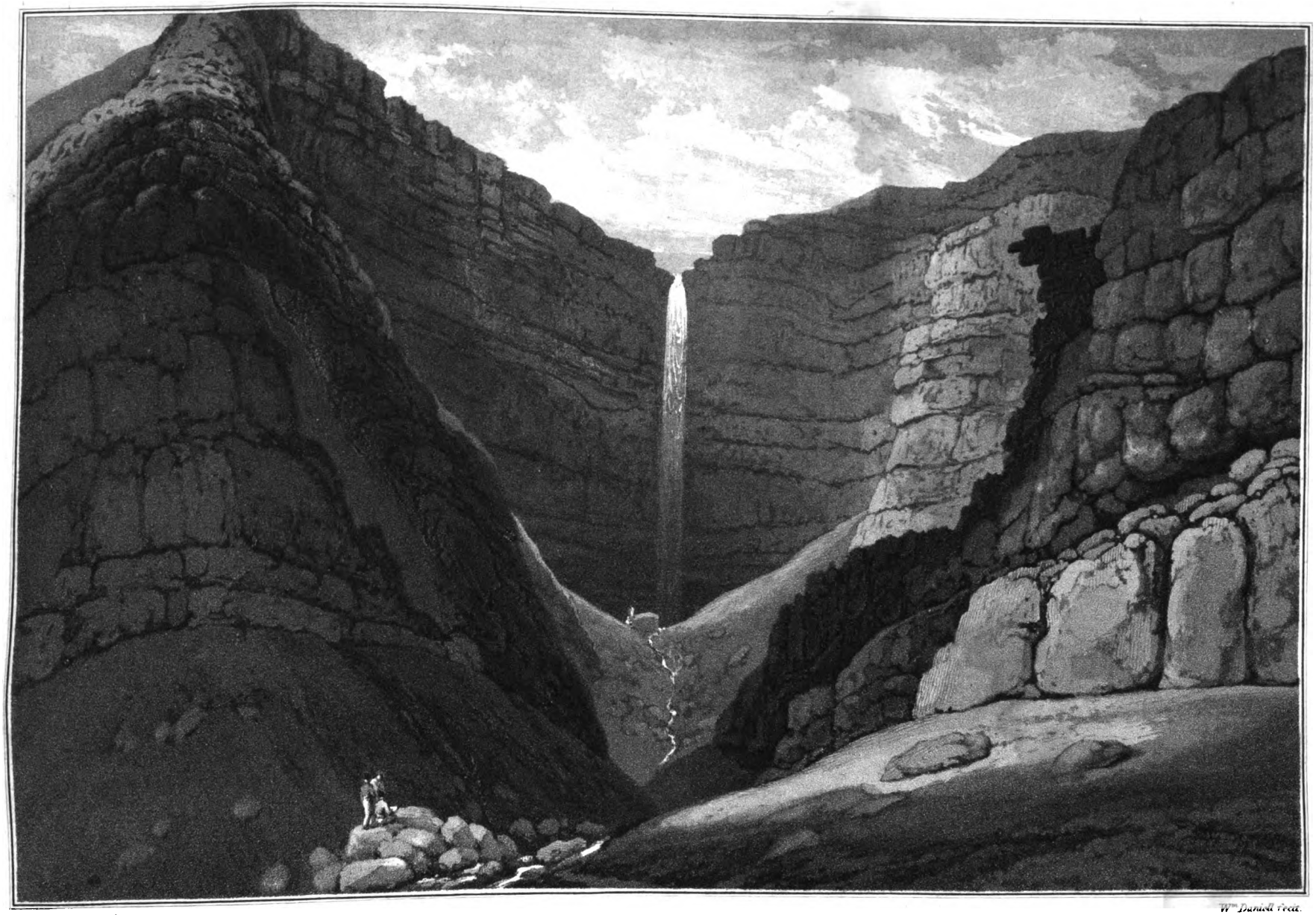

Sam.l Davis Esq.r del.t

Wm. Daniell Sculp.

The Water-fall at the head of James's valley. S.t Helena.

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SECTION XVII.

*On Adherence to Old Customs.**

" There is an unaccountable prejudice to projectors of all kinds; for which reason, " when I talk of practising to fly, silly people think me an owl for my pains."

ADDISON.

SOON after I took up my country residence in England, I scraped acquaintance with some of the neighbouring farmers, who now and then called in, to take a pot of ale; and I received them with civility. Our discourse naturally turned to agricultural subjects; and, whilst I reasoned on new plans, my *practical* guests very soon betrayed they had not the smallest faith in " book-farming," as they called it.

" Their own practice," said they, " must undoubtedly be the best, because it was that which had been handed down by their forefathers." At one of our meetings, I very strongly deprecated this conclusion, and plainly told them they were all wrong. I had no doubt their practice was good: but nevertheless, said I, from books many useful hints, and much valuable information, might be derived upon the *better* practice of other countries; and which, in my opinion, would succeed equally in Sussex, as in other parts of England.

* I hesitated some time before I determined to give a place to this and the succeeding paper: but as this paper was calculated to overturn old prejudices; and " Calculator's confessions" convey a variety of accurate information upon points connected with the old and new husbandry of St. Helena, and as the sentiments of the supposed Norfolk farmer are precisely those which I entertain, in regard to the best modes of cultivating, and improving, the island, it is hoped that these considerations may appear sufficient reasons, for having mixed papers of a ludicrous nature with those of a graver description.

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Nettled at my arrogance, Homespun, who was the most talkative at our meetings, the cock of the village club, and whseo face, at this time, glowed with my October, exclaimed, "Pugh! I care not a single barley-corn for your books; give me practice; give me example: (thumping his empty jug on the table) these are the best rules for farmers." "True, friend," said I, gently rebuking him for his indecorum, "example has no doubt, a prevailing force on the actions of mankind; I admit it is more conclusive than the soundest reasoning; and since I see it will be impossible to persuade you by argument, I will take another mode of bringing you to my way of thinking."

Homespun by no means relished my admonition, and grinning a sarcastic smile, he, and my other rustic guests rose, and left the room.

It was not until some months afterwards that he paid me another visit, and this was during an unusually dry summer, when all the pastures were burnt up. He looked dejected, complained bitterly of the times, said he was almost ruined, that his cattle were starved, and his cows were dry, and he had been obliged to send them to Romney Marsh. "Mr. Homespun," said I, "you shall now be convinced that this is entirely the consequence of your pertinacious adherence to old customs; if you had listened to *my* advice, and to book-farming, all this mischief would have been prevented. Come with me, and behold the lucerne you despised. The crop was put in a few days after our last debate; and I have already had three cuttings. My pastures, you see, are equally bare as your own: but my cattle are still in good condition, and my cows yield twice the quantity of milk they had ever done before: and all this is the effect of the crop you treated with so much contempt."

Homespun looked grave, and as he approached a field of six

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acres, he was struck with amazement; he had never before witnessed such a crop. His forefathers had none of the kind. It was indeed uncommonly fine; he viewed it, and handled it, and exclaimed, "Well, surely this is a lamentable fine thing: I will immediately set about five acres: Oh! fool that I was! but I really could never believe it was possible to have so weighty a shew in so dry a season." He added, scratching his head, "I now perceive that you gentlemen farmers are not so much to be despised as we thought of." I thanked him for his compliment.

Thus, by perseverance and example, I succeeded in removing from Homespun, and the rest of my mulish guests, who were all attracted by my lucerne, the strong prejudice under which they laboured towards old custom, and against book-farming. Their visits daily became more frequent; my opinions were listened to, and received, with more respect and decorum than was usual at the commencement of our acquaintance. There was an end of their sly jeering and jokes, which did not escape my penetration; and I soon became a sort of oracle among them, whom they eagerly consulted at those times when they came to see my "new-fangled husbandry," as they called it, many parts of which they did not, however, fail to imitate; but not till they saw it was their *interest* to do so.

In turning the minds of men from ancient custom, or deep-rooted prejudice, we must naturally expect to encounter difficulties. The most forcible arguments are of no avail: but once shew them a successful example; prove to them, practically, the advantages they will derive, and self-interest will do the rest.

By such means no one need despair of converting the most obstinate. Enlightened and liberal minds are, indeed, far more easy to persuade. Indubitable testimony of what has already been done, and even the opinions of men who have been distin-

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guished by their skill and knowledge in the matters of which they treat, are received by those with scarcely less persuasive force than the evidence of facts. It is to this class of men I submit the following extracts; and whilst I recommend them to their serious attention, I must remark that they will find the opinions of Sir John Sinclair, and the experience of Sir Henry Vavasour have most fully corroborated those opinions I have offered in the St. Helena Registers, on the subject of increasing the food of cattle, by means of arable land.

27th July, 1812. K.

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SECTION XVIII.

Calculator's Confessions;—and his Opinions on the new Husbandry at St. Helena.

To the Editor of the St. Helena Register.

SIR,

I HAVE been amused, and I hope you will find edified, by your correspondent K's conversion of Mr. Homespun, as related in your last month's Register. I confess to you that I had long been a downright branch of the Homespun family: I have had my strong prejudices to old custom, and I verily believed it was totally impossible to surpass our home practice: but I have lately witnessed some things that have actually made my hair stand on end; I see the ploughs, with two or three horses, managed by two men, doing more work in one day, than any ten of my best slaves could perform in ten days; besides these fellows, Mr. Editor, cost me a deal of money, for after the first purchase (dear enough, to be sure) I must feed and clothe them; and after all, they are sometimes very saucy and idle. Now, thinks I, if I could only teach Cæsar and Pompey, my two best men, to manage this new machine, and if I were to clap-to a couple of my best oxen, or horses, I should get more work from these two men, in one day, than I could otherwise get from the whole of my gang: and my cattle would not be a hair the worse for it.

I am a man of figures, Mr. Editor, and I can make calculations; I can multiply pounds, shillings, and pence into each other, which, *you* will allow, is no small proof of my abilities; and, therefore, you will readily admit I am not ignorant of the common rules of

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arithmetic. I have, indeed, reflected, very seriously upon Homespun's story, and as I think, it is clearly proved he was a bit of a gooseacre, a self-conceited obstinate fellow, until he got new lights, I hope this confession, although at Homespun's expense, will prove to a man of your knowledge and penetration, that I am not undeserving to be ranked amongst those of "enlightened and liberal minds," to whom K. has submitted the practicability of keeping a cow and pigs upon a small piece of arable land.

I will now tell you my plain notions upon "the new-fangled husbandry," as Mr. Homespun called it; which we have lately witnessed in this our island, where I have been born and bred, and from which I have never been farther than the fishing banks. You will, I hope, excuse me, if I should be a little long-winded; but, when we folks are beginning to write for the public view, you cannot expect we can express ourselves in the same short way as other folks would.

Well then, Mr. Editor, I must also confess to you, that I am naturally what they call a sly fellow, and I own, when I first heard of all these new things, I thought they were down-right foolishness. I thought my grandsires knew all that was necessary to know. They planted yams, and potatoes, and beans, with the spade and pick-axe; which had been the practice from time immemorial; and, as I had never seen a plough, I did not like to shew either my ignorance or curiosity; nor did I wish to appear publicly an advocate for new things; because I dreaded the jokes at the Almond-tree.*

I therefore thought it best to take a peep, unsuspected, at what was going on. I sneaked along the roads early of a morning, and had a good view of all that was doing, over the fences. I saw

* The "Almond-tree," in James Town, is the resort of idlers.

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Mr. Fish,* with the said plough, getting on at a great rate; tearing up the ground neatly on the Church fields: I saw Tom Stream,† and Johnny Spring ‡ no less busy, and I was wonderfully surprised to see how much they did in a short time. A couple of horses, or three or four oxen, and a couple of men, were all they needed; indeed, I am told, in Scotland two horses and one man do the business; and when once we get our half-starved beasts and horses in good order, and in strength, by the green crops of corn I have also seen, there is no reason why *we* mayn't do the same likewise.

Now, thinks I to myself, if I can get Cæsar and Pompey, with a few of my cattle, at present doing nothing, to do all these things, what a great saving it would be. These two able men, and one of the new machines, (that rolls on wheels like a wheel-barrow) with some of my beasts, would, I am positive, do me more service than 50 Cæsars and 50 Pompeys. Away then, says I to myself, with your spades and your pickaxes; and let me try the same things. The first cost will be nothing compared with what I shall gain.

After attentively observing the method of ploughing, I thought other things might be seen—I watched; and saw drills opened with the plough, and potatoes dropped in, and then covered up. I then saw the said Fish, Stream, and Spring, (and favourably ominous I think it is, that these allied names come together) still using a plough to take the potatoes out of the ground; nay, I saw more; for the harrow was used; and I wondered at the scraping it made; for at one scrape, it scratched out, in a couple of hours, more potatoes than twenty of my slaves could gather

* Mr. Breame, of Norfolk, the superintendant of the Company's farms.

† Thomas Brooke, Esq. Secretary to the Government, and author of the History of St. Helena.

‡ John Defountain, Esq. Storekeeper.

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in the course of the day. Such things are truly surprising: but when I considered the power of a claw hammer in drawing a nail, I concluded there must be something not less wonderful, although unfathomable to me, in the power of the new machine we have had introduced here, because I well know, that if I and my whole family, who are pretty numerous, were to try, with our fingers to draw a well-hit nail, we should not succeed. I have no knowledge of what they call mechanics; I know nothing of the principles; but this I know, that a claw-hammer will do the business with a small twist of the hand; and so I take it to be with the plough.

Now, Mr. Editor, after seeing, (which you know is believing) I set to work: I bought a plough and a couple of harrows; and I succeeded far beyond my expectation.

I then began with my calculations; and I clearly convinced myself, and I hope I shall convince others, that by saving expense in labour I should be a great gainer. I ascertained I could bring into cultivation a wondrous deal more land; that I could sell much more of my produce to the shipping; that by having plenty of potatoes I might not only feed my family and slaves without the expense of buying, and the trouble of bringing from the valley; and raise pigs, and assist my cattle when our seasons fail; but that I should likewise keep more money in my pockets; which have been rather empty of late; and if I and my fellow planters could once contrive to furnish the breweries with barley for malting, we might get a deal of the money that is now sent to England, and this I understand amounts to eight or ten thousand pounds a year: and as Mr. Brabazon's brewery is now getting up, there will, no doubt, be a greater demand.

What a great gain would all this be to us planters. Being a man of calculation (as I told you before) without pretension to

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much knowledge, I can easily satisfy myself, that a penny saved is a penny got; and I perceive also that if all our pennies go into the Company's stores, or into the hands of the shipping gentlemen, or are sent to England, our purses must be very lank; and this is, I verily believe (nay I am perfectly convinced), the reason we are not so rich as we might be. I never thought of this until I read Homespun's story; which made me think it was at least probable there was something wrong or rotten at bottom.

Now I see it plainly; and I will no longer be slack in trying to mend my ways, and my fortune; by such means as are in my power. And, now, to conclude.—From all I have said, I think I have shewn you clearly, that I am no longer of "the mulish tribe." I heartily wish my conversion may open the eyes of my dear countrymen, whose welfare I have sincerely at heart, in order that they may follow my good example.

There is one thing I forgot to mention, and I hope it is not too late, that if we can raise barley for the breweries, we can at the same time have plenty of straw for our cattle, if a dry season should happen, and also we might have plenty of manure, which I see by two or three papers in your Register is reckoned a good way of making our lands yield better crops. Perhaps you may have heard that we have not much come into this practice yet, and that we do tolerably well without manure, that is, we can have twenty or thirty successive crops of potatoes, without ever once thinking of manure, and yet I find it is considered absolutely necessary, and is very much the practice in the country you came from.

But to tell you the truth, Mr. Editor, I have not found that my lands pay so well after so many croppings. Something therefore is wanting, and this something, I take to be manure. So very bad indeed are some of the lands near me, that after 10 or

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15 years of our Homespun management, we find, although the crops seem to grow well, they do not come to perfection; they get what we call the rot. No doubt manure would act like a medicine, and might soon restore the lands to health and vigour.

The diseased farm I allude to, is that near the High Peak, and as I have long had an eye to that farm, but that its case seemed to me a desperate one, I thought it advisable to consult Mr. Fish; who, no doubt, we may reckon our best land doctor here; for as to Stream and Spring, they are as yet only young beginners, and cannot be expected to know much of these things.

When I asked Fish, "what he would do with that land?" he replied, "Do with it! why, I would make a mine of it." I did not immediately comprehend him, and he explained, he would make his fortune by it—"How so?" said I—"Easy enough," said he, "for the land is good, and a great part of it, fit for the plough. In front of the new house, both in the vale or ravine, as well as on the west side, there are many fine acres, at present covered with coarse and useless grass.

"There is also a good large space inclosed around the premises, which I see it is needless to plant, unless it goes through a proper course. Land, you must know, is in a manner like your stomach, which I fancy you would not like to have constantly crammed with the same food; and without any sort of seasoning: in time, you would not relish it; and disorders might follow. Now I understand this land, or stomach, has tasted nothing for the last fifteen years but potatoes; consequently, it loaths that food, or, as we English farmers say, "*it is tired of the crop.*" This expression is very common with us, for we say such a field is "tired of clover," and the like; although this is a mode of expression, on which some of our best agriculturists have differed. One thing, however, is certain, that if land, in its nature tolerably

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good, has been drained by repeated, or improperly managed crops, the best remedy for recovering such exhausted land, is by a few months fallowing; and by frequently stirring it, and clearing it of every sort of vegetable substance. By this plain and easy mode (a sort of abstinence, if I may so express myself,) not only will its tone be recovered by the influence of air and moisture from the atmosphere, but weeds will be extirpated, and insects of every sort (and particularly the grub) will be effectually destroyed by being deprived of that food which is absolutely necessary for their subsistence, at the time the solar heats occasion a change from the oviparous state."

I did not clearly understand the whole of those odd expressions; but I however perceived, that Mr. Fish is, as I imagined, a very learned land doctor. I therefore candidly told him that I understood, only in a general way, all he had said, in which there seemed to be no small portion of good sense. I therefore requested him to go on, and tell me particularly the mode he would pursue with that farm, if it were in his own occupation.

He continued—"If that farm were mine, and I should be glad it was, if I had not so many other fish to fry," (here he condescendingly suited his expression to my comprehension,) "I would, in the first place, clear the garden, comprising several acres, of all its rubbish, and lay the whole under a clean fallow, for at least six months. I would frequently stir the soil, and would not in all this time allow a weed to rear its head. Whilst this operation is carrying on, I would enclose 10 or 15 acres of the most level and best land, and pare off the sward and coarse grass, forming small heaps all over the field, and then set fire to them. The ashes should, if possible, be ploughed in immediately.*

* We observe by the Agricultural Report for 1812, a full confirmation of this practice. It is there stated, "that the newly enclosed lands in England, have in general proved

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I would endeavour to give it two or three ploughings and as many harrowings, so as to pulverise the soil perfectly before I put a crop in it. I would then, just before the setting in of the rains (in January or June) open furrows, nearly level, and at the distance of two feet asunder; and drop potatoes in them, at one foot apart in the rows. These, I would cover with the plough; and by such means I should secure myself a good crop from this fresh land; a crop which I am convinced would nearly repay all my expenses; if I could sell it at the island price, which is eight times what I got for potatoes in England. But as I might not be able to do this, I would take care to have a good breed of pigs to consume the surplus produce at the farm; I would give them and my sheep and cows a part; and by keeping all those and my cattle, in what we call a farm yard, (and of which I have seen nothing of the kind in this island) I would soon have plenty of manure, or muck; from which I should derive great profit by its meliorating effects on the lands when I am to prepare them for wheat; or as they begin to fall off in the powers of vegetation. My pigs would soon increase in number and size; and for which I should never be at a loss for a ready sale; which is a vast advantage to a farmer: and whilst taking two successive crops of potatoes from the garden, and the new land, I would prepare another new field of the same size as the first, and treat it in the manner I have described; and so on, till I had all the best land in cultivation.

fertile; and the mode of breaking them up, in all improved districts, is by paring and burning. All the old objections to which having been proved futile and groundless, where subsequent good culture is persevered in; namely—working the eradication of weeds, pulverising the soil, and giving these lands a fair portion of manure."

The good effects of paring and burning have been frequently manifested here, by a comparison of crops, that have had the benefit of turf ashes, with those where no ashes were spread. The superiority of the former is so great, that few would believe it, if they had not seen it.

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The first field and garden should next have a smothering crop of barley or oats, sown rather thick, and which, in two months from the seed, would yield me 12 to 16 tons per acre of green fodder. This would be a valuable acquisition to my stock; and by haying and stacking some, it would secure me against losses that I might otherwise sustain in my cattle, if a bad season should arrive.

" After these three crops, from each of these portions of land, I would again sow them with a crop of barley for malting; and for which I should also have a ready sale to the breweries; and gradually I would bring these lands by manuring, into a state, fit for bearing wheat: for furnishing a portion at least of that flour, which is at present imported here from other countries. It is by such means only, Mr. Calculator," said he, " that you farmers can ever expect to be wealthy, like some that I know in England. You have the same, nay better means; you have a charming climate, and a fine soil, and your lands give you *two* crops a year. The sale prices are high; and you have always a ready market. What more can a farmer desire? All you want, my friend, is a little industry; and I am happy to see that many of you begin to be sensible of these truths."

I was exceedingly pleased with Doctor Fish's lecture. My mind had been prepared to receive every word he uttered; I was however at times rather puzzled: but I hope I shall hereafter convince you, by my next communication, that his care to instruct me, has not been thrown away.

I am, SIR,

Your obedient Servant, and constant reader,

August 6th, 1812. CALCULATOR.

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SECTION XIX.

On the Importance of introducing Agriculture on the Island—Erroneous Notions regarding Rats; not more numerous at the Farms than in England—successful Method of destroying them.

An earnest wish to promote the interest of this island, has induced me to devote my leisure to various agricultural experiments, which have from time to time appeared in the St. Helena Register.

The results of those experiments very soon satisfied my mind of the practicability of a change of system, from which the greatest improvements might be expected. I was aware, however, of the difficulties I should have to encounter in overcoming strong prejudices in favour of customs that had existed from the earliest period of the establishment. The same sort of prejudice is, indeed, peculiar to farmers of all countries, and is, perhaps, equally strong in England as in any other part of the world. I could not, therefore, blame those who differed in opinion: but I was by no means discouraged. I was fully persuaded that perseverance and successful examples, would ultimately succeed in turning the minds of even the most obstinate, to a change, which, I can easily demonstrate, is obviously for their advantage. This change, indeed, appears to me the only possible means of ameliorating the condition of the landholders: and of extricating them from the difficulties they experience from the limited and narrow views they have long pursued; by which they could hardly expect much more than a bare subsistence.

There is, at length, a prospect of the objects I have long had in

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view being fully accomplished. My experiments have attracted notice. Much more land is in cultivation; and several instances of the new husbandry have already been manifested.

The laudable examples of Messrs. Brooke and Defountain, in substituting the plough and harrow for the spade and pickaxe, and the exertions of Mr. John Kay and Captain Sampson, deserve particularly to be noticed. *Their* success may prove even far more convincing to the landholders in general, than the soundest reasoning or the clearest deductions; although they have been drawn from experiments, conducted with the greatest care and attention; a mode, unquestionably the very best, and most certain of increasing our knowledge in the agricultural, as well as in other arts.

Those gentlemen, therefore, have well established claims to commendation and to encouragement; being the first who have led the way, and given their attention to the wise and judicious order of the Court of Directors, dated the 7th of March, 1794; "to render every acre of ground, capable of cultivation, as productive as the nature of the soil will admit."

Not doubting that some others will soon imitate these beginnings, (since they will find it their interest to do so) and that they will adopt the plough and harrows, by which they may, *without any addition to the manual labour they now possess*, greatly extend cultivation, it would be superfluous to offer any further arguments with a view of enforcing what has been already stated in my several communications upon this most important subject: I shall, therefore, only recommend to all the landholders, that they direct their attention to the many acres of excellent land, at present in a state of nature, lying, in a manner, waste and unprofitable; that they duly reflect on the deteriorated state of the pastures in seasons of drought, and their former losses in cattle;

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and compare the immense difference in produce between even the best pastures and a crop of green fodder of oats or barley, (Goat Papers, page 76. St. Helena Register for April, page 6) and then ask themselves this question—" Have not our lands, in many places where they have been tried upon a small scale, yielded abundant crops of corn and esculents *twice* a year?" The answer is too obvious not to confound the most sceptical, or I should rather say, the most obstinate, who may yet persist in declaring, that " agriculture here can *never* succeed." Such assertions must appear most futile and unfounded, when contrasted with numerous facts that have been already so clearly and incontrovertibly established.

It is now four years that I have given my attention to this subject; and after distinctly proving the capabilities of the soil and climate, I have not the smallest hesitation in declaring my opinion, that if 6 or 700 acres, of the two or three thousand, that are capable of being brought under the plough management, were allotted to corn crops, the present population might be supplied with bread corn in abundance, the stock of cattle and sheep augmented by means of straw and green fodder crops; a vast number of hog's reared; the lands meliorated by manure; and the breweries furnished with a sufficiency of barley for all their demands. I will now proceed to examine the effects that would be produced from so laudable an appropriation of even that small portion of the pasture lands.

According to an investigation detailed in my minute of the 31st August 1810, (published in page 6 of the " Laws and Ordinances)" it will be found that the consumption of flour at St. Helena in the year 1808, was 878994 pounds. Doctor Adam Smith reckons 2000 pounds of wheat to be the produce of an acre: but I will take it at 1800 pounds of flour; at which rate

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about 500 acres of wheat annually, would suffice for the island consumption.

The import of malt this year was 790 quarters (say 800) or 6400 bushels. This quantity might be produced from the barley wheat, which is undoubtedly the very best for malting. (Register for March, 1812, page 4.) Supposing 50 bushels to be the average produce from an acre, 130 acres would annually supply the breweries. It may therefore be inferred that 6 or 700 acres in the cultivation of corn, would render the import of wheat and malt almost unnecessary, and the landholders might not only by this means retain among them the sums that are annually sent to England for flour and malt—but they might also derive ample sustenance for their cattle. The fodder of straw from the 700 acres, may be rated at twelve hundred tons. This added to occasional green crops of fodder, which, (after two months from sowing the seed), would yield from 12 to 14½ tons an acre, (Register* for April 1812, page 4) would place the proprietors of cattle beyond all risk, when the grass lands are bare and parched by the sun's heat.

Now supposing the wheat to be, at first, sold at 3d. per pound, or 15 shillings a bushel,† and that 900,000 pounds is the annual quantity required, the value would amount to £11,250 0 0

6400 bushels of barley wheat when malted, if sold at 12s. a bushel, would be - -	3,840	0	0
And, 1200 tons of straw, at £2. - -	2,400	0	0
	£17490	0	0

As the St. Helena beer is in high estimation at the Cape of

* The experiment referred to was with Cape oats.

† After the first three years of cultivation, the island price should keep pace with the London market.

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Good Hope, it may be presumed the demands for it will yet increase. The farmers of St. Helena might therefore, by means of industrious habits, and a proper course of husbandry, obtain from these new sources, a return equivalent to 17,000 pounds sterling annually from *one* crop, exclusive of what they derive from their cattle, and potatoes, and other articles of farm produce. From this concise view of our home consumption, and the prospect of export, it must be obvious, that no farmers in the world can possibly have a stronger incitement to exertion, than those of St. Helena: for they are at all times, assured of a ready sale, and even more than a reasonable price, for all their products. If then they would only strive to be purveyors to the population, instead of allowing the whole to be buyers, of flour, malt, pork, &c., imported here, it requires no uncommon degree of penetration to discover that a vast improvement would soon take place in their condition.*

To these objects I would therefore recommend the capital and industry of the island being employed. Some persons here may possibly consider that the plans recommended are upon too grand a scale; but I will ask them, What are 700 acres of cultivation in the hands of a few English farmers?—Lord Kames, in his "Gentleman Farmer," has stated, (in page 292) "I will venture to say that in most soils, fifty acres of corn may be commanded by a single plough; provided the crops be distributed through the year, to afford time for managing all of them with the same men and cattle." According to this estimate, which I believe is generally admitted to be correct, in England and Scotland, the

* It is true that flour and malt can be conveniently imported from other countries: but surely it is an object of the first importance to promote the prosperity of the landholders. This can never be effected whilst all their scanty earnings are expended on foreign produce. Such has been, and is, the practice at St. Helena.

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whole proposed extent of cultivation on the island of St. Helena, and from which so many advantages might be obtained, could easily be managed by fourteen ploughs or fourteen petty farmers; that is, if they confine themselves to *one* crop only in the year.

I would not however propose that any one should, at first, attempt the cultivation of 50 acres. I would have all to do a little—to feel their way—and to proceed gradually, according to the extent of their means. In this, there can be no hazardous speculation; and as there are between 60 and 70 landholders, and above 200 blacks attached to the farms*—surely among these collectively, the 700 acres proposed would require no very extraordinary degree of exertion.

For carrying into effect the plans I have here recommended, there is a sufficient number of horses, and many cattle, that usually remain idle on the pastures. These might soon be trained, as well as the slaves, to the several purposes of husbandry. Those who have only small patches of land might use the spade, or hire a plough, as suggested by Sir John Sinclair in his paper on Cottages. Others who have a greater extent of land might begin with only 8 or 10 acres of their choicest land. In both cases the new lands should be inclosed with good fences, the process of paring and burning adopted, and after the soil has been well cleaned and pulverized, there should be two or three successive crops of potatoes taken; and, at the time the new lands are under this management, I would recommend, that the present old potatoe grounds should be ploughed, and sown with barley wheat, or Cape barley or oats, in the proportion of two bushels per acre for the first crop —this would yield a weighty produce of green fodder, which

* In addition to these, the farmers can hire Chinese labourers from the Company's establishment, at two shillings per day.

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would keep the working cattle in good condition, and furnish some portion of manure for those lands, that have been exhausted by a long succession of incessant cropping.

The second barley wheat crop should be raised with a view to malt for the breweries: and finally, these old potatoe grounds might be brought into a condition fit for crops of wheat, provided attention be paid to making manure, by collecting all the cattle of the farms at night into an inclosure, and feeding them with the green-fodder crops.

By such means the landholders might put into their own pockets those large sums that are now expended for the purchase of flour and grain; and, in the course of a few years, they would undoubtedly become more affluent than they can ever expect to beif they c onfine themselves to the comparatively limited demands of the shipping. They would also derive an inward satisfaction in thus being obedient to the Honourable Company, and in contributing to the general good of the island, and to the comfort of all other classes of the community: they would, moreover, prove themselves deserving of the favours and indulgence of the lords proprietors; which they and their families have invariably received at their hands.

Although a due consideration of all those advantages (which I have no doubt are attainable from the extension of agriculture) will, I trust, excite a considerable degree of emulation and exertion, yet it is my intention to recommend that certain premiums, or prizes, should, be given to those who shall first distinguish themselves as able cultivators. And with a view of animating their exertions, I mean to propose that there be six classes of merit. The first prize to be given to him who shall have broken up the largest portion of uncultivated land, or delivered into the Company's granary, in James's Town, the greatest quantity of

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barley wheat: because this is a corn that can be most easily raised. The other prizes to be allotted in gradation according to the respective proportions of newly cultivated land and of corn delivered: but no person should be entitled to any prize who shall not have broken up five acres of uncultivated land, and delivered not less than two hundred bushels of corn, the produce of his farm.

I shall further recommend that the first six candidates for prizes within the first twelve months from this date, in addition to honorary prizes, should receive a remuneration equivalent to the original cost of one plough and a pair of harrows.

No expensive buildings would be required for the proposed improvements, because the corn could be received into the Company's granaries in James's Town, or deposited in a small building appropriated, or erected for the purpose at each farm, immediately after it has been thrashed and cleaned. These operations might be performed in the open fields, a practice which is usual in India and in Egypt, and even in the colder regions in the North of Europe.*

But the advantages which the landholders would derive from the appropriation of 700 acres to the culture of corn, would very far exceed what has been stated. It must be recollected that the St. Helena lands produce *two* crops a year, consequently, the wheat and barley grounds might yield, annually, *a second* crop, either of potatoes, mangel wurzel, cabbages, beans, or turnips, and the like; or of green fodder from corn, or from maize; or even, in some instances, a second crop of barley and oats, for grain; so that it seems possible to supply the proposed quantities of flour and barley wheat by means of less than 700 acres—and, therefore, it may be reasonably supposed that between 4 and 500 acres of corn land, would be found sufficient, and the other two

* Vide, Section III.

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hundred acres would yield a sufficiency of potatoes and other esculents. After a spirit for cultivation has been once excited, I have no doubt it would rapidly increase, and be carried far beyond the scale I have here suggested.

I must however remark that if two crops a year are taken from the proposed 700 acres of cultivation at St. Helena, they will require nearly double the number of ploughs and labour, that they would in England—that is 28 ploughs, instead of 14.

Hence it seems, that if 700 acres were constantly cultivated with corn, they might produce, annually, more wheat and barley than would be immediately wanted for the island consumption. Part of the second crops, or green crops, if given to cattle and sheep, would soon augment the island flocks;* and the number of hogs that might be reared by means of those crops, for supplying the garrison occasionally with fresh pork, would be im-

Several persons, in England, appear to have entertained doubts as to the propriety of breaking up much land on this island, from an apprehension it would interfere with the grand object of raising stock for the supply and refreshment of the shipping: but so far from lessening the supplies, either of cattle or vegetables, I trust, I have distinctly proved that it would be the best possible means of increasing them.

There is another erroneous notion regarding St. Helena: "rats," it is said, "are so numerous and destructive that it would be wholly impossible to raise corn." This mistake has evidently originated in the fate of a few square rods of corn; which had been the utmost extent of former trials. So small a quantity, growing near the abodes of these animals, would soon be devoured in any country: but where several acres of corn have been cultivated on this island, even the first crop did not suffer more than it would have done near the homestall of an English farmer. The succeeding crop sustained no injury whatever: for, at the time of reaping the first crop, care was taken to destroy every rat that had burrowed—the number was one hundred and twenty—and the consequence was, that when the second crop was cut down, only three rats were found in a field of six acres. In the same manner the Plantation-house garden, of seven acres, has been effectually cleared of rats. Four years ago they were extremely troublesome; but during the last two years they have been wholly extirpated.

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mense, compared with what it now is. The Company have agreed to purchase it at the rate of one shilling per pound: so that for pork, there would be no want of a ready sale. Besides, by the rearing of these useful animals, together with stall-feeding of cattle, large quantities of excellent manure would soon be obtained, by which, even the poorer lands might be brought into a state of improvement, fit for the purpose of raising wheat. I have, indeed, already had some exceeding fine specimens of this corn, cultivated in good land, without manure. In short, proofs are not wanting to establish, in the clearest manner, the certainty of success: but, a total change of husbandry, and a proper application of our manual labour, and of the muscular strength of animals, are absolutely necessary. By such means, I am confident, that in the course of a few years, there would be effected a change in the value of this island, which would be highly beneficial to the interests of the Company as well as individuals. It might lead to the most important consequences; particularly if it should be deemed expedient to convert St. Helena into a depot, or mart, for Indian and China produce, a plan that has been more than once suggested.

20th August, 1812.

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SECTION XX.

On Transplanting Wheat—further Remarks on Grubs—and on Barley Wheat.

On the 7th of July 1812, two acres at Plantation-house were sown broad cast with nine pecks of barley wheat, which were ploughed in, but not harrowed. Although this is the sixth crop from this land, since it was broken up, without using any manure; the barley wheat became so extremely thick, in seven weeks after sowing, that it was apprehended, the crop might be lost unless it were thinned. Mr. Breame, an experienced farmer from Norfolk, and indeed every other person who has viewed it, declares he never beheld so exuberant a specimen of corn. All agree it ought to be thinned—and various modes have been proposed.

That which I have preferred is one I can pursue with confidence, as it is the same I adopted in the year 1809, with some wheat that became too thick and exuberant in the spot where it was sown. As the process which was then used, differs, I believe, in some respects from the practice in Europe, and particularly in the age and size of the transplanted corn, I shall here transcribe the notices I have retained of the crop alluded to.

1809, Nov. 9.—Sowed a small parcel of wheat received from Van Dieman's land.

1809, Dec. 20.—At this time it was grown 12 to 18 inches high, and so extremely thick and exuberant, that it becomes necessary to thin it. Two beds were this day prepared, each measuring two rods in length, and half a rod in breadth. In No. 1, whole tufts, the produce of one grain, as drawn from the seed bed, were

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dibbled: the rows one foot asunder; the plants 9 inches distant in the rows. In the same manner *half tufts* were dibbled in No. 2. The leaves of the plants of both were cut off 3 or 4 inches above the roots, previously to their being dibbled in the beds.

1810, January 12th.—The half tufts in No. 2 have withered and died. The whole tufts in No. 1, as well as those in the seed bed, are in a most flourishing condition.

January 25th.—In the seed bed a good many ears appear—the transplanted wheat a little backward, but very strong, notwithstanding a long absence of rain.

February 5th.—Some of the transplanted wheat is now in ear—i. e. 89 days from the seed.

February 11th.—In the seed bed all in ear—There are two sorts, one is short-headed, without beard, 33 inches high—the other sort with long ears, measures 44 inches high. In No. 1, only half a dozen ears have as yet appeared.

February 28th.—The wheat in the transplanted bed and seed bed, is all in ear—this is 112 days from sowing the seed.

March 6th.—The ears of both beds are now well filled. Transplanted corn rather more backward than the seed bed.

March 21st.—The transplanted bed still greenish. The corn in the seed bed was cut down two days ago, fully ripe: ears well filled: it has been 4 months and 10 days in the soil.

April 1st.—Examined the transplanted bed. The short headed wheat without beard is the most exuberant. Taking 4 plants of this sort indiscriminately, the number of ears produced from each seed were these:

No. 1	-	-	24 ears.
2	-	-	29 ditto.
3	-	-	32 ditto.
4	-	-	58 ditto.

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April 11th.—Gathered some fine specimens from the transplanted wheat, and sent them to England. Their growth was 5 months and 2 days from the seed.

I regret having omitted to notice the average number of grains produced from a single grain. I intended the transplanted bed should have determined the produce per acre—but having suffered a good deal from Canary birds, this was prevented. I shall therefore only add, that the transplanted specimen, before it was attacked by birds, had as fine an appearance as any crop of wheat I ever beheld. This success, although upon a small scale, most unequivocally proves that St. Helena is capable of producing wheat of excellent quality. In several other printed papers I have also shewn, that the culture of wheat, as well as of other corn, may be extended even to more than the present population can possibly consume.

A paper I have seen on the subject of transplanting wheat, by Mr. John Ainsworth, of Glen, recommends the practice as one of the best means of providing against a scarcity of this necessary of life. The saving of seed is undoubtedly a considerable advantage, since it is stated that half a peck sown in a seed bed, would furnish plants for an acre. Besides this saving of seed, there are in England some other advantages pointed out: but as they do not apply to the more temperate climate of St. Helena, it is unnecessary to notice them. Upon the whole, however, it seems that this excellent mode of culture is deserving more attention in England, than has hitherto been paid to it.

In India and China, transplanting is the common practice. Seed beds of rice are thickly sown for the purpose of furnishing plants for the lands. The young plants are deemed sufficiently strong for transplanting in 30 days: even until 60 days they continue fit to be removed. It will be seen by the foregoing wheat

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experiment, that the plants removed from the seed bed, had been 24 days in the ground—they were strong, and from 12 to 18 inches high. This mode possesses several very material advantages, which appear to have escaped the observation of those who have treated on the subject.

By sowing the seed-bed at the proper season, which may be from a month to seven weeks before the period of transplanting, a farmer may crop many acres of land that otherwise he might not have had leisure to prepare *before* the season for sowing had passed. His transplanted crop would not be more than three weeks behind that which was sown. In new land too, where the grub might be destructive to young and tender plants, whose sweet milky matter is their favourite food, a first crop of transplanted corn might be put in, without much risk; because these older plants having larger stems and roots, and harsher juices, are, I conceive, far less nourishing to the young grub; and are also less liable to the depredations of those of larger size. At all events, the labour of those insects, in destroying a crop well advanced, would evidently be many fold greater than for one that is attacked at the time the corn begins to sprout.

These are matters that will soon be decided; for I have at present, a crop of young barley wheat (now five inches high) adjoining some that has been transplanted. If the former should suffer, and the latter escape injury from the grub, it would establish a very important point in farming: for by the transplanting mode, a first crop of barley wheat (or other corn) might be taken from newly broken up land, which, if dibbled close, would give a large quantity of green fodder, or even of corn, whilst its shading the land from the sun's heat might prevent the hatching of eggs that may remain in the soil.*

* At Long Wood the grubs lately commenced their depredations on the edge of a barley wheat crop which was well grown, and covered the field. But whether it is that

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The barley wheat, sown on the 7th of July, was begun to be transplanted on the 25th of August: that is 49 days after sowing. The whole of the two acres was, at this time, so extremely thick, that plants for many acres might have been well spared; whilst the thinning of this large seed bed will, no doubt, make it more productive of corn. Alleys, in breadth about 15 inches, have been opened in parallel lines six feet asunder. These alleys admit air through the crop, and furnish numerous plants; they also form the paths for the men to enter, and thin the intermediate beds; which is thus done without trampling the corn.

About four acres have been already transplanted.* The plants are remarkably fine, measuring 18 to 24 inches high, exclusive of the root: each plant is the produce of one seed. Some were cut at 6 inches above the root; and others at 9 inches; that is, just beyond the spindle; according to their size. I conceive that presenting in this manner *open* tubes to the atmospheric air and moisture and dews, will be advantageous, by admitting these internally to the roots, which might be prevented in some measure, if the entire plants were set. These, at the extremities, are apt to wither and dry, and consequently become less fit for imbibing moisture; which, at any rate, could only be received externally on the leaves. The best of these two modes will also be soon ascertained, as several hundred plants have been set out in the state they were drawn from the seed bed: this will afford a comparative experiment.

the roots and stems, when strong, do not yield the proper nourishment; or that it is noxious to these insects to be deprived of the sun's warmth, and enveloped in damp and moisture at the roots of green corn, the fact is, all that entered, only a few yards, were found dead.

* Transplanted wheat, at St. Helena, will not succeed, unless the season be wet for some time after the plants are set out; and long continuance of very dry weather proved fatal to this crop.

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Another mode of cultivating corn has been suggested by the exuberance of my present crop of barley wheat. It seems to me, that it is possible, at St. Helena, to raise a double crop on the same field; that is, one of green fodder, the other of corn. This may be accomplished by reaping (at six or seven weeks growth) the green crop in parallel alleys. If these alleys are two feet wide, and six feet apart, and are crossed by others at right angles 18 feet asunder, they would form beds, 6 feet by 18; or of 108 square feet. Thus a current of air would be admitted all around and through these beds, by which the growth of the corn might be promoted sufficiently without thinning. The effect of this mode is to be ascertained by the barley wheat sown on the 7th of July last.

That barley wheat is a crop of great importance in St. Helena, I have clearly demonstrated in several of the St. Helena Registers; and that it might be of infinite utility in the United Kingdoms, by keeping down the high price of bread, appears to me very possible. It is as easy to grind and make it into meal as wheat itself; and if this meal were mixed with one half, or a third of wheaten flour, it is likely it would make a pleasant and wholesome bread.

When, to these circumstances are added, that 60 bushels can be obtained from one bushel sown on an acre; that it will grow on lands (without manure) of very inferior fertility to those required for wheat crops; and also that it yields the finest sort of malt, it seems truly surprising that a grain so valuable, in many respects, should have been hitherto so very little noticed in England.

The only accounts I have as yet read of it, are by Warren Hastings, Esq.;* by Mr. C. W. Paget;† and by R. Flower, of

* Retrospect of Discoveries, No. 25.

† Agricultural Magazine, No. 39. Retrospect, No. 26.

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Marsden, Herts.* All these agree in pointing it out as a corn most worthy of attention. I shall postpone offering any further observations until the experiments now in process are completed. These regard the different modes of culture: the making the meal into cakes, and loaves, and the sort of bread it may produce, when mixed with certain proportions of wheaten flour.

14*th September*, 1812.

* Retrospect, No. 31.

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SECTION XXI.

On Terracing Lands, and preparing the Sides of Hills for Cultivation.

THE Chinese form the sides of their hills into terraces before they bring them into cultivation. The same practice obtains in other countries. At the island of Madeira, many of the vineyards occupy terraces, of this sort, from the summit to the base of mountains, where the declivities are equally abrupt as the eastern side of Ladder Hill.

Sir George Staunton, in his Account of the Embassy to China, describes those terraces in the following words:—

"Throughout this short land journey, and far from all great roads, not a mile was travelled without a village; nor a spot observed, except mere rocks, or perpendicular heights, that was not under cultivation. The villages were not surrounded by walls, but were adorned with handsome gateways at their extremities. The rocky places appear to have been denuded of the earth which had covered them formerly, in order to place it on a surface where it might become more conveniently a medium for the nutriment of plants. Where the face of the hill or mountain is not nearly perpendicular to the level surface of the earth, the slope is converted into a number of terraces one above another, each of which is supported by mounds of stone. By this management it is not uncommon to see the whole face of a mountain completely cultivated to the summit. These stages are not confined to the culture of any particular vegetable. Pulse, grain, yams, sweet potatoes, onions, carrots, turnips, and a variety of

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other culinary plants, are produced upon them. A reservoir is sunk in the top of the mountain. The rain water collected in it, is conveyed by channels successively to the different terraces placed upon the mountain's sides. In spots too rugged, barren, steep, or high for raising other plants, the camellia sesanqua, and divers firs, particularly the larch, are cultivated with success.

"The collection of manure is an object of so much attention with the Chinese, that a prodigious number of old men and women, as well as of children, incapable of much other labour, are constantly employed about the streets, public roads, banks of canals and rivers, with baskets tied before them, and holding in their hands small wooden rakes to pick up the dung of animals, and offals of any kind that may answer the purpose of manure; but above every other, except the dung of fowls, the Chinese farmers, like the Romans, according to the testimony of Columella, prefer soil, or that matter which is collected by nightmen in London, in the vicinity of which, it is, in fact, applied to the same uses; as has already been alluded to in describing a visit to the Lo-wang peasant, in a former part of this work. This manure is mixed sparingly with a portion of stiff loamy earth, and formed into cakes, dried afterwards in the sun. In this state it sometimes becomes an object of commerce, and is sold to farmers, who never employ it in a compact state. Their first care is to construct large cisterns for containing, besides those cakes and dung of every kind, all sorts of vegetable matter, as leaves, or roots, or stems of plants, mud from the canals, and offals of animals, even to the shavings collected by the barbers. With all these they mix as much animal water as can be collected, or of common water, as will dilute the whole; and in this state, generally in the act of putrid fermentation, they apply it to the ploughed or

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broken earth. In various parts of a farm, and near paths and roads, large earthen vessels are buried to the edge, in the ground, for the accommodation of the labourer or passenger who may have occasion to use them. In small retiring houses, built also upon the brink of roads, and in the neighbourhood of villages, reservoirs are constructed of compact materials to prevent the absorption of whatever they receive, and straw is carefully thrown over the surface from time to time to stop the evaporation. And such a value is set upon the principal ingredient for manure, that the oldest and most helpless persons are not deemed wholly useless to the family by which they are supported."

The Chinese mode of terracing is, however, attended with great labour. It seems to me that the object of retaining the rains and moisture on the sides of sloping grounds, might be nearly as well attained by easier means. If land have only a moderate descent,* it may be ploughed uninterruptedly from the lower to the higher parts; and if double furrows, or channels, were made *on level lines*, at distances of 12 to 24 feet, (varying according to the declivity) the water might be intercepted as effectually as by the more expensive mode of terracing. The steeper the side of the hill, the nearer to each other should these furrows be made.

On very steep hills, I would advise, instead of terraces, that belts of the sward (5 or 6 feet in breadth) should be left at the time of preparing them for cultivation. These belts might be accurately marked out by a mason's level, in a level direction, leaving spaces between them 12 to 16 feet broad: which alone should be ploughed or trenched.

By this method of preparation, not only might all the rain

* In St. Helena, there are above 2000 acres, that might be as easily ploughed as any lands in England.

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water which falls within an inclosure be retained, but the soil would be prevented from sliding down; which it is apt to do in very steep places, when it is fully saturated with water.

Those belts would also yield occasional cuttings of grass for cattle, &c.; so that, although the whole field would not be in cultivation, yet no part would be useless.

Whoever has attentively observed the difference between a crop at the upper and lower parts of a sloping field, must be convinced of the advantage of retaining throughout an equable portion of moisture. The upper part is always poor; because it has been deprived of moisture, by the natural tendency of water to descend: on the contrary, the lower part is the most exuberant, as it becomes the repository of almost all the rain that falls within the inclosure. This fact may be perceived in several parts of this island: and it might be further exemplified by an easy experiment.

Let any one cultivate a square rod on the natural slope of a hill, and let him take another square rod adjoining, and make it perfectly level, plant them both in the same manner with potatoes, or corn: and it will be found the level spot will be infinitely superior in produce.

In regard to manuring, a great deal might be done without too servile an imitation of the Chinese practices. Manure, indeed, is deserving all possible attention: because it is the best means of ensuring good crops; and of obtaining, proportionally, a larger profit from the labour bestowed in cultivation.

I hope these observations may be serviceable to those at present engaged in breaking up the new lands. I cannot, however, conclude them without strongly recommending, that where the terracing mode is not adopted, furrows, or belts, should never be omitted: no field, upon a sloping surface, can properly be culti-

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vated without one or the other: but as I have before observed, they must be carefully made upon perfectly horizontal lines; for if these furrows or belts, were to deviate from a true level, they would operate as drains and carry off the water: and thereby defeat the very purpose for which they are intended.

24th September, 1812.

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SECTION XXII.

Useful Notices on Husbandry at St. Helena—Crops liable to Attacks of Caterpillars and Aphides—Crops not liable to Injury from those Insects—Lord Bacon's Idea of the Generation of Caterpillars apparently substantiated—Method tried to prevent their Generation—the Haulm of Potatoes suggested as an auxiliary Food for Cattle—Experiments to determine the Produce of Cos Lettuce—yields, in three Months from the Period of Sowing, about 15 Tons per Acre—an excellent Food for Hogs.

It is an essential part of husbandry, to make choice of those crops that can be most advantageously raised in the country where it is practised. Almost every kind of esculent and grain may be cultivated here with facility and success; and the returns, from the time of sowing the seed, are much more rapid than in colder climates; seldom exceeding from four to four months and a half. Some plants are, however, more liable than others to attacks of the caterpillar and aphides. Amongst these may be reckoned the potatoe, cabbage, turnip, mangel wurzel, and radish: but the potatoe rarely suffers so as materially to injure the crop; yet the haulm, from this cause, and the present system of culture, is entirely lost to the farmer.

Amongst the crops least liable to injury from those insects, are corn of all sorts; kidney beans, carrots, and lettuces; wherefore these are particularly deserving attention.

In regard to the loss sustained in potatoe haulm, it seems to me, there is a very simple, and perhaps an advantageous mode of averting it. I have observed that caterpillars generally make

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their appearance at a certain stage of the growth of the plants, which seldom happens until they have been some time in blossom; and probably the generation of those insects, as supposed by Lord Bacon,* may take place at the time when a certain, yet invisible, change has operated in the leaves of the haulm; that is, when they begin to have a tendency to putrefaction. This opinion seems to be strengthened by recent observation; for, accidentally, I had a small patch of potatoes in the Plantation-house garden, considerably more advanced in growth than a crop which closely surrounded it; and I observed the haulm of this patch was swarming with caterpillars, and the whole was soon after destroyed, whilst the adjoining younger plants were wholly untouched: nor were these attacked until about a fortnight afterwards, when they had arrived at a more advanced state of growth.

It seems to me that the generation of the caterpillar may be prevented by keeping the haulm in a young and tender state: and this can readily be done by cutting it down after it has been some time in blossom. If this cutting were to commence at about 9 or 10 weeks growth,† and to continue for a fortnight, the potatoe farmer would secure about four or five tons per acre of green fodder for his cattle, which would well repay any small difference there might be in the produce of the potatoes. I have, indeed, good reason to believe that this difference would be far

* Lord Bacon observes, "the caterpillar is one of the most general of worms, and breedeth of dew and leaves: they breed in the spring chiefly, because then there is both dew and leaf. And they breed commonly when the east winds have much blown; the cause whereof is, the dryness of that wind; for to all vivification upon putrifaction, it is requisite the matter be not too moist. Caterpillars, both the greatest and the most, breed upon cabbages, which have a fat leaf, and apt to putrify."

† A surer guide is to cut the haulm about ten days after it has blossomed: red blossoms appear in 10 or 12 weeks; and the white in 7 or 8 weeks after planting.

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less than in England; owing to the almost unceasing powers of vegetation which are observable in this climate. It is probably from this cause, that the gooseberry, the currant, and some other shrubs become evergreens, and bear no fruit. If then, in these, we observe so great a change in the process of nature, it is at least probable that similar changes may take place, although not perceptibly, in other vegetable productions.

I have not yet completed my experiments upon the effect of cutting potatoe haulm: but so confident of success do I feel, from the observations I have already made, that I mean to adopt the practice upon a crop of two acres allotted expressly for the purpose. My former trials were indeed imperfect, on account of cutting the haulm *within* a field of potatoes, so that when the uncut haulm was attacked and devoured, the caterpillars naturally crawled to the young and tender sproutings of the cut haulm, and eat them off as fast as they appeared.

That the cut haulm will reproduce leaves I have frequently ascertained. The following are some notices I have retained of a small experiment: but, the comparative produce of potatoes from the uncut and cut haulm was accidentally omitted.

On the 12th of February, 1809, the potatoes were planted. On the 4th of April, whilst in blossom, a square rod was mowed. It yielded 67½ pounds of fine tender haulm, which is at the rate of 10,800 pounds, or 4¾ tons per acre. The haulm of the adjoining crop was left uncut. I observed on the 28th of April, the uncut haulm had become brownish, and was much eaten by caterpillars, whilst the haulm that was cut, (having reproduced leaves) was of a fine green. The last notice I took of this experiment was on the 14th of May, when the cut continued in green leaf, that is, 40 days after it had been mowed. This is sufficient to prove that the powers of vegetation do continue in this climate long after

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the haulm is cut: and if further trials should fully confirm what is here related, the discovery of a new mode of culture would be of infinite advantage, because the potatoe haulm, hitherto lost to the farmer, would become valuable as a food for cattle and hogs; and would consequently be of great service when the pastures are low; and would also give him the means of enriching his lands with large quantities of valuable manure, which might be made by consuming the haulm either as food or litter (or both) in his farm yard.*

Lettuce is an esculent which I have never observed here to be injured by the caterpillar or aphides. Its growth is quick, and it may, I believe, be raised at all seasons. I lately ascertained its produce per acre: which proves it might be a valuable acquisition to the hoggery, and an auxiliary food for cattle. The circumstances of the crop alluded to are as follows:

On the 13th of August, last, a seed bed was sown with cos lettuce, received from the Cape of Good Hope. It was transplanted on the 28th of September, at the distance of 15 inches from plant to plant. On the 13th of November, although well grown, the plants did not entirely cover the soil, wherefore, they might admit of being set nearer to each other, that is, at one foot asunder. In this case an acre would contain 43,560 plants. Twenty plants cut close to the roots on the 13th of November, yielded 16 pounds of excellent fodder; consequently an acre would produce 34,848 pounds, or about 15 tons. It is probable it might even exceed this quantity, and that the average weight of full grown plants might be one pound *in three months from*

* Rating the present potatoe grounds at one hunded and fifty acres, and the produce of haulm at 4 tons per acre, this would be 600 tons of green fodder from one crop, or 1,200 tons from the two crops in the year. The practice here suggested, will, I trust, attract the attention of the landholders.

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sowing the seed: for two of the largest plants having been selected, one weighed one pound and six ounces, and the other one pound.

In the annexed paper on the use of hay tea, the hog feeders will derive much valuable information; and I very strongly recommend their attention to lettuce crops, as I am confident they will find them equal, if not superior, to any other in feeding sows and pigs, and particularly during the summer months.

Mr. Arthur Young informs us, in his Calendar of Husbandry, that he first observed the sowing of lettuces for hogs, practised in a pretty regular system on the farm of a very intelligent cultivator (not at all a whimsical man) in Sussex. He had, every year, an acre or two, which afforded a great quantity of very valuable food for his sows and pigs." He adds, that "it yields milk amply, and all sorts of swine are fond of it." And he thinks that "the economical farmer, who keeps many hogs, should take care to have a succession of crops for these animals, that his carts may not be for ever on the road for purchased grains, or his granary open for corn, oftener than is necessary." These observations may well be applied to this island, where grain is dear, and where the carriage to the interior is difficult, being upon an ascent of 5 or 600 yards from James's Town.

It gives me peculiar satisfaction to observe that my endeavours to promote the prosperity of this settlement, by publishing the results of experiments, and by communicating every useful tract I find, on subjects connected with the important objects I have had in view, have not been fruitless: at this moment a spirit of improvement in husbandry is clearly manifested in all parts of the island, and the happy consequences resulting from it are already felt in a degree that scarcely could have been credited by those who, not unnaturally, were averse to new practices.

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What has already been effected, merely by the extended culture of potatoes, and by some most exuberant specimens of corn, are sufficient to prove the surprising change that will soon be produced in the value of this long neglected island; a change which will be not less beneficial to the lord's proprietors than to the landholders, and all other classes of the community.

It is also with gratification I observe, at the Cape of Good Hope, the same energies, and the same pursuits, carrying on under the auspices of his Excellency Sir John Cradock. His observations upon the importance of agriculture, and upon its slow progress in that colony, are so truly applicable to St. Helena, that I shall conclude this paper with an Extract from a Government advertisement (in the Cape Town Gazette) dated the 17th of October, 1812. This paper contains sentiments exactly similar to those that were communicated in the St. Helena Register for October, 1812, in an Extract entitled "On the Cultivation of the Soil." This coincidence, as to the time of publishing, is not less remarkable, than the coincidence of the subjects; that two neighbouring colonies, remote from the mother country, which have been so long occupied without having made the smallest advances in the arts of husbandry, should, at the very same time, be roused from inactivity to useful and laudable exertion.

In the advertisement referred to, Sir John Cradock makes the following observations.

"It is now established on the authority of the most eminent and enlightened men who have written upon the subject, that agriculture forms the true basis of the Wealth of Nations; and that commerce and manufactures, although powerful auxiliaries, are considerations of secondary importance. Agriculture too, or the cultivation of soil, is naturally the primary object of all emigrations from civilized nations to foreign countries: and such

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productions are most cultivated as experience may point out to be most congen al to the climate and soil.

" When it comes to be considered, the number of years that this colony has been possessed by an enlightened and industrious nation, it is a matter of surprise that the progress in agricultural pursuits has not been more rapid. This observation is plain to every understanding capable of considering the inadequate proportion which the increase of cultivation bears to that of the population of the settlement.

" His Excellency, with a lively sense of this growing evil, and an ardent desire to lend his full support and countenance to the support of agriculture, as well as the improvement of cattle of every description—objects so highly essential to the permanent welfare of this valuable and growing Colony, judges it expedient to re-organize the Board of Agriculture; and is pleased to accept the resignation of the gentlemen hereafter named, (members of the late board), who for the reasons they have severally assigned, cannot afford such portion of their time as becomes necessary to give efficiency to the institution, and embrace the various objects which must at least for some time, command the attention of the board."

" His Excellency has therefore taken upon himself, the Presidency of the Board of Agriculture."

These judicious sentiments ought to serve as a farther proof to our cultivators, and to convince them that the change which has happily been effected here, is conformable to what is universally admitted as the true basis of the Wealth of Nations. It has been well observed in an able Essay on the Spirit of Legislation, " that without agriculture, *which is the base of the prosperity and power of the state*, there can be neither commerce nor manufacture. *It is to agriculture that we ought ever to attend*

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as the most important point. She furnishes nourishment, fuel, clothing, and the first materials for every thing. Population is created by agriculture, which gives subsistence to all without exception—to the farmer and the workman, as well as to the merchant."

20*th November*, 1812.

On the Use of Hay Tea in feeding Hogs.

THE use of hay-tea, in the feeding of hogs, has been attempted by Mr. Saunders, of Stroud, Gloucestershire, with much success. He was led to the use of this liquid, from considering its effects in weaning calves. In his experiments, as stated in the Agricultural Magazine, the sorts of hay made use of, were *clover*, *sainfoin*, and *lucern*;* and he thickened the tea or wash indiscriminately, with either grains, or bran, or pollard, or any kind of meal, or boiled cabbages, or *boiled potatoes* (carrots, though excellent, he had none;) sometimes adding two or more of these articles, as his stock of either most enabled him. And he had the greatest satisfaction to find, that he made *a single sack of boiled potatoes*, when mixed with wash, and without any other ingredient, go as far as four or five sacks, (though boiled) when he gave them to the pigs alone; and the expense of the wash thickened with potatoes, is considerably lower than potatoes alone. With the view of showing the practicability of prosecuting the plan individually upon a larger scale, he gradually increased his stock to upwards of four hundred; and in the course of his experiments,

* The wire-grass has been used with success, at Long Wood, in rearing calves: and appears equal to any other grass for the purpose recommended. K.

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he used nearly fifteen hundred hogsheads of the wash, consuming when his stock was at the highest, about five hogsheads daily. And, incredible as it may appear, he maintained them, collectively, at the very low rate of one penny a head per day; and in excellent store order, and many of them fit for the butcher. It deserves particular attention, he says, that, in a week or fortnight after he had commenced his experiments, the pigs which he had before been feeding with potatoes alone, improved in their coats, which from looking coarse, assumed a gloss, and became fine and short; a proof, surely, of the great nutrition of the food, and of its perfectly agreeing with pigs.

"Nor is it, says he, less remarkable, that this voracious animal, though fed with this food but twice a day (which he prefers to oftener) would lie down contented for the remainder, provided he was well-ringed, and had a warm and dry place to shelter himself under.

"And this he attributes to the following causes, besides the nutritive properties of the wash:

"He found it beneficial to store the boiled potatoes in large casks (in which he conceives they would keep good above a twelvemonth) and when they had remained in them some time, freed from the water they were boiled in, (which is considered noxious) they not only went further, but they generated a spirit; and the wash being also, as he apprehends of considerable strength, they disposed the animal to betake himself to rest from their soporific and intoxicating qualities; a circumstance evidently conducive to his quicker growth. Nor can an objection be raised to this food when applied to the flesh of the animal. So far from possessing any pernicious quality, it communicates, perhaps, a richer and more delicate flavour to the pork and bacon than they receive when fed after the common mode; and the butchers,

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and others, not only eagerly purchased his pigs, but commonly remarked that they rapidly improved when put up to fatten."

"And hence," says he, "arises another most important consideration.

"He is confident he could make one sack of meal, of whatever description, go as far as two sacks in the common mode of fattening. For, by gradually thickening the wash with meal, it forms, he thinks, the best introduction to the higher and last stages of fattening, both for pork and bacon; indeed that method should be followed throughout the process, using the wash instead of water. The increased quantity of a cheap and highly nutritious food, thus administered, will satisfy the voracious habits of this animal, and yield, he says, the greatest profit; and this alone would cause an immense annual saving of corn, which would tend to ensure plenty and cheapness; the grand desiderata in all experiments. For the price of a commodity, in a great degree, depends on the relative quantity produced, and the regular consumption; to lessen the consumption, therefore, diminishes the demand, and has the same effect as increasing the supply, which must necessarily cheapen the article."

And his calculations of the daily expenses of this mode of feeding, are the following:

He observes, that "clover, or sainfoin hay, at £4..13..4. per ton, is 4*s*. 8*d*. per hundred, or ½*d*. per pound; and that twenty pounds of either, well boiled, will make with the addition of the incorporating ingredients, sufficient wash or food to maintain, throughout the day, fifty store pigs, from three months old, to an indefinite age upwards.

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Estimation of daily Expenses of feeding fifty Store Pigs.

	L.	s.	d.
To potatoes, two bushels, (120lb. at 5s. per sack,) -	0	2	6
To clover, or sainfoin hay, 20lbs. (which will give 10 quarts, or 2½ gallons of liquid food to each pig) -	0	0	10
To coal, ½ bushel, (at 6*d.* per bushel, average value)	0	0	3
To attendance, boiling food, serving, &c - -	0	0	6
Total	0	4	1

This is 1*d.* short of 1*d.* a head per day.

Again:

Potatoes, 1 bushel, (60lbs.) - - - -	0	1	3
Grains, 2 bushels, at 6*d.* per bushel, - -	0	1	0
Clover, &c. - - - - -	0	0	10
Attendance, - - - - - -	0	0	6
Coal - - - - - -	0	0	3
Total	0	3	10

This is 4*d.* short of 1*d.* a head.

Or,

Potatoes, 1 bushel - - - -	0	1	3
Meal of any description (particularly oat-meal, as being the cheapest) or pollard - - - - -	0	1	4
Clover - - - - -	0	0	10
Coal - - - - - -	0	0	3
Attendance, - - - - -	0	0	6
Total	0	4	2

This is exactly 1*d.* per head.

It is remarked that " carrots, either raw or boiled, are excellent; and these, with oatmeal and grains, would make a cheap

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and good addition. And that the hay when put into the furnace to boil, should be put into a net, or a basket with a lid to it, or in a tin kettle and cover, filled with large holes, and the potatoes, (or carrots, &c.) should be steamed over the tea, while gently boiling or simmering. This may easily be done, by fitting to the furnace, a vessel having a number of holes, of the size of a common auger, bored through the bottom of it, so as to allow the steam to pass through the potatoes, with which the vessel is filled; and having a little moist clay, or a wet flannel or cloth put circularly round the bottom, where it rests on the mouth of the furnace, so as to secure the steam from escaping. By this mode of steaming the potatoes, a considerable saving will be made in the article of coal. The potatoes should be but slightly steamed or boiled, and not reduced to a pulp,* and whilst hot should be trod or rammed in casks for future use. The hay, after boiling, may be dried, and perhaps offered to store cattle: or else thrown to the pigs as litter, or, to add to the dung heap. The wash should be carefully given to the pigs in a lukewarm state, and if meal, or pollard be added, it should be thrown into the tub, or cooler, immediately after boiling the wash, and well mixed together; but steaming the meal, or pollard, and even the grains might be a further improvement. The water where there is a sufficent fall, may be led into the furnace without any trouble whatever, by means of a leaden pipe; or may be conveyed into the furnace by a spout from the pump; and the tea may be drawn off, through a cock into a cooler, which should be placed by the side of the furnace. To convey the wash to the pigs he used an

* The steaming operation would, no doubt, be much facilitated by previously slicing the potatoes, by means of the potatoe cutters; of which a few were lately received at this place, from England. K.

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open barrel or hogshead, suspended upon a pair of shafts with wheels to it, drawn by a single horse.

It is added, that " in the estimates of the expense of maintaining the pigs, it should be observed, that he has taken no credit for the article of manure; and thus his pigs will make the farmer a present of their dung, as well as pay him a good price for their keep. Fifty strong stores, with a sufficient quantity of stubble, (which is frequently and very improperly, ploughed into the land) or carpenters' shavings and saw-dust, or virgin earth, or sand, especially sea-sand, (where obtainable) laid down in the yard, will make, he says, in the course of the year, from two to three hundred waggon-loads of excellent manure: the sea-sand will add saline particles to the manure, and check evaporation." And he thinks it " necessary to remark, as a most favourable circumstance, that the hay-tea binds the dung of swine, and renders it hard and black, like sheeps' dung; and if it does not produce this effect, it must assuredly be either bad in quality, or not properly boiled, or not rendered sufficiently strong; all which particulars should be most carefully attended to; and the state of the dung is an admirable guide to go by. The hay should always be of an excellent quality; and that which heated best, and contains most of the saccharine juices should have the preference. Bad hay is certain destruction to the pigs. Clover stands first, next sainfoin, and lastly, meadow hay. Indeed, most of his experiments were made, he says, (though not by choice) with meadow hay."

Extracted from " The Complete Farmer"—by K.

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SECTION XXIII.

Homefolding of Sheep recommended.

THE subjoined paper, addressed to the Editor of the Agricultural Magazine, seems deserving attention on this island ;* where the little regard paid to sheep is obvious to every observer. In general no care whatever is taken of them, and they are suffered to wander every where, like wild animals, to the great annoyance of the industrious, whose crops are often destroyed by their depredations. The laws which enjoin the tending of flocks are never heeded : nor do the proprietors appear to be sensible of the real value, and importance of those animals, nor of the great improvement they are susceptible, when treated with due care and attention.

The plan proposed by Old Suffolk might be introduced here, at a very small expense, and with few deviations: for instance, instead of the fold being made along the side of a barn, any stone fence wall, having a northern aspect, is equally well suited to the purpose. The covering of the fold might be of furze, or coarse grass, and the nightly provender for the sheep, instead of hay or turnips, might be at first (until straw is more generally introduced here) the refuse of potatoe crops. Even a small allowance, placed within a dry, warm, and well sheltered retreat, during the rainy seasons particularly, would very soon tempt these naturally tame, quiet, and inoffensive animals, habitually to seek for their homely dwelling and food, after a very little

* Dated 23d October, 1811, and signed " Old Suffolk."

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attention of the shepherds in training them to come to it at a certain hour in the evening. I am persuaded that whoever may try the experiment, will soon be satisfied that the expense and trouble incurred will be amply repaid, by the improvement of his sheep, and by the valuable manure they will produce: and if the experimenter should happen to have a real *gout* for good mutton, I have no doubt he will be very thankful to Old Suffolk for the good advice he has given.

18*th December*, 1812. K.

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SECTION XXIV.

Progress of Agricultural Improvement in 1810-12—*beneficial Effects of extending Cultivation—the Government commend the Exertions of some, and animadvert on the Obstinacy and Idleness of others—flourishing State of St. Helena in the Year* 1675.

THE tracts contained in the preceding Sections are selected from many others which were published in the St. Helena Register, between November, 1810, and January, 1813; and as it was observable that they had produced a considerable change in the sentiments of the landholders—by the plough gradually coming into use, and by the quantity of land in cultivation having been doubled during the above period, it was, therefore, deemed expedient officially to notify the progress of improvement—to commend the industrious, and to animadvert on the conduct of those who seemed obstinately determined to adhere to their old practice, and to withhold their aid from the grand object of general improvement. This measure of the Government, it was hoped, might operate as a further stimulus to exertion; and with this view the following Proclamation was issued:

"*Island of St. Helena, 11th January,* 1813.

"THE Governor and Council have derived much gratification in observing the laudable spirit of industry which has for some time past, been manifested amongst several respectable landholders; and in contemplating the progress in agricultural improvement; by which a fair prospect is now held out of St. Helena becoming, in a short time, far more abundant in its internal resources, and

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in the means of refreshing fleets, than it has ever yet been since its first establishment.

" Comparing the annual Reports of the farms for 1810 and 1812, there appear to have been added since November, 1810, ninety-one acres to the cultivated lands: of which 49½ acres have been thus improved by the exertions of individuals.* The beneficial effects resulting from this increase of cultivation, have been felt by the garrison and the community at large; by His Majesty's and the Honourable Company's ships having been enabled to provide potatoes at moderate prices, in quantities sufficient for their crews during a long passage; and by a part of those sums formerly expended in the purchase of imported food, having become a saving to the island—proportionate (at the least) to the diminished expenditure of flour and rice.

" Amongst those whose exertions have been conspicuous in producing this beneficial change, and whose merits are deserving particular notice on the present occasion, are Messrs. Brooke and Defountain, Miss Mason, Captain Sampson, Mr. Samuel Knipe, Mr. John Kay, Mr. Bagley, Mr. Hayward, Major Wright, Mr. Legg, Mr. George Leech, Mrs. Alexander, and Mr. Alesworth.

" It is to such examples (which evince a strong conviction in those persons of the importance and advantage of agriculture) that the Governor and Council look forward with confidence to its more general introduction; which is undoubtedly the best possible means of promoting the prosperity of the island, the real

* Although these beginnings may appear trifling to English farmers, there being only " 91 acres *added* to the cultivated lands since 1810;" yet when it is considered that prior to that period 88 acres were the total in cultivation; and that this statement is taken from the official return, dated in May last, which comprises but a small portion of the year 1812 (since which time many more acres have been added,) the whole improvement, under all the circumstances of this place, is as much as could have been expected.

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interests of the Honourable East India Company, and those of individuals.

"The greatly enhanced prices of beef, pork, and flour from England, and of rice and paddy from India, during the last five years, together with the present state of affairs with America, are circumstances which should operate as a further stimulus to exertions; for by still extending the culture of potatoes and corn, and raising crops suited to the feeding of live-stock, the demands for the above-mentioned articles of import might be greatly diminished; and little inconvenience would be felt in this remote part of the globe, from those causes which unavoidably have led to the high price of provisions in England.

"These observations will have due weight with those landholders who have already manifested a laudable disposition to promote the improvement of the island: but the Governor and Council can entertain but little hopes of their making any impression on the minds of others, who occupy extensive farms, have large establishments of servants, and who still persist in their former habits of inactivity, or absolute idleness; thus betraying equally a total disregard to their own interests as to the Company's orders. It is therefore once more recommended to the landholders of this description, that they examine the 'Laws and Ordinances,' in their possession, and inform themselves of the Orders of the Court of Directors, particularly those stated at length in the General Letter, dated 30th March, 1810, (page 86 to 90.)

"It is also proper to apprise the persons alluded to, that annual Reports of the farms, and lists of families and servants are regularly transmitted for the information of the Court of Directors, by which will be seen the relative industry of individuals; and consequently the deserving and the undeserving tenants are thus brought to light. Wherefore, if the Court shall discover that

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neither their repeated orders, nor arguments, nor successful examples, will rouse this class of landholders to exertion, it is indeed highly probable they will order them a fate similar to some of those 'drones' who are noticed in the 13th page of the 'Laws and Ordinances;'* not by a removal from the island, but from the lease lands, in order that these may be placed in the hands of persons who are willing to contribute to the general welfare of the community.

"By Order of the Governor and Council,

T. H. BROOKE,
Secretary.

* *Extract of a Letter from the Court of Directors to the Governor and Council, dated 8th March, 1675.*

"We are pleased to hear from you that the island is in such a flourishing condition, and that all things thrive well with you. But yet we find there is wanting industry and pains taking in many of the inhabitants, which we will not permit to continue to be amongst you; for they that will not plant and take care for provisions of their own, we will not supply them; rather send them home under the title of drones." On the 11th of January, 1709, the Court again ordered "the drones to be sent away"—and in this letter it is added, "We are pleased with the account Governor Roberts gives us, that he effectually checked that lazy disposition of too many of the planters, to let all run to ruin; and by removing some of the drones, and speaking well of the industrious, has mended the temper of the rest, that they are as busy as bees," &c. &c.

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SECTION XXV.

Feeding Sheep with Potatoes, and Soiling Cattle recommended.

I HAVE selected two extracts for insertion in the present month's Register, upon subjects, which I think are deserving the attention of every landholder.

The first, "*On Feeding Sheep with Potatoes*," * shews that potatoes were particularly serviceable to ewes and lambs "at a trying season;" that bullocks and sheep, although they had plenty of good hay within reach, preferred the potatoes: which were given to the cattle raw, unwashed, and whole. These are valuable facts; since they prove decisively that the extension of the potatoe culture is an excellent means of guarding against losses in cattle and sheep "in trying seasons;" (as seasons of drought undoubtedly are) against which it has not been the practice here, as in England, to make any provision.

The paper on feeding sheep further teaches, that five bushels of potatoes, given every morning to 100 sheep, and afterwards turning them out to pasture (instead of fresh straw twice a day) might be sufficient to keep them in good condition; but as English sheep are much larger than those of this island, even *half* the above quantity might be a vast benefit: and in this case two bushels and a half would suffice for a hundred sheep; being a daily allowance of about a pound and a half to each. At this rate, supposing an acre to yield, from the two crops annually, 400 bushels: these are equivalent to 16,000 daily rations; or sufficient for more than 40 sheep throughout the year.

* Young's Annals of Agriculture,

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Surely this application of *one acre* of potatoes on a farm would be profitable in many points of view; the sheep would no doubt be improved by an increase in flesh; the milk of the ewes would be more abundant; the lambs would of course thrive better; and the practice of home-feeding would soon tame the whole of the flocks; and particularly "the common sheep," which are, at present, a great nuisance throughout the island; besides, by littering the feeding yard with coarse grass, or straw, &c. a considerable quantity of valuable manure would be obtained, that would amply repay the trouble and expense; and would be of great value in restoring exhausted lands. When all these circumstances are considered, it must be admitted that the practice of feeding with potatoes would be extremely beneficial. If it were once introduced, it would soon convince the landholders, that however extensive the culture, there could never be any want of consumers, even should there be a disappointment in the sale. One of our potatoe farmers, some time ago, assured me he had lost five hundred bushels, which had rotted, as there was no demand for them. I did not pity him; because if he had been in the habit of feeding his servants and cattle at that time, in the manner here proposed, or of lowering and suiting his prices to the market, such a loss could never have happened.

The paper in question further proves that potatoe grounds are an excellent preparation, as I have formerly noticed, for crops both of barley and wheat.

The second Paper "*On Soiling Cattle,*" * is at present not so applicable to the state of this island as the first: but it contains

* Soiling is a phrase in husbandry expressive of the practice of mowing certain crops in a green state and giving them to horses, cattle, &c. in stables, stalls, and yards. There are some judicious remarks, in page 311 of Mr. Arthur Young's Farmer's Calendar, relating to this mode of feeding, to which the reader is referred.

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much useful information, and may possibly induce our cultivators to turn their attention, when husbandry is a little more advanced, to clover, rye-grass, and lucerne, which in England are esteemed valuable crops for this system of feeding. In the mean time, I again recommend the practice of green fodder crops from barley-wheat, oats, or common barley; for all these have already been found the most certain, and most rapid in growth in this climate. Their produce is immense, being from 12 to 14 tons per acre in two months from putting the seed into the ground. It is indeed my opinion that these crops are preferable here to clover or rye-grass. The lucerne, however, thrives well, and certainly deserves attention; because, when once established, it will last for many years without any other expense than harrowing and weeding; which are necessary for the purpose of keeping it clear of weeds, and opening the soil for the admission of air and moisture.

Mr. Curwen's Paper * also contains some useful hints on the subject of soiling, that are equally applicable to the crops I recommend as to those he made use of.

February 24th, 1813.

* Communications to the Board of Agriculture, Vol. VI. Part I.

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SECTION XXVI.

Doctor Berry's official Letter to Governor Beatson—suggests the Culture of Kew Nopal and Cactus Tuna, *the Arabian Date, and Guinea Grass—Doctor Berry's fermenting Balls an excellent Substitute for Yeast—Captain Haig's Report on Nopal—a nutritious and valuable Antiscorbutic.*

To the Honourable Colonel Beatson, Governor, &c. &c. &c. St. Helena.

HONOURABLE SIR,

HAVING, whilst traversing the most interesting parts of this extraordinary volcanic island, seen, with much satisfaction, the very beneficial consequences that have resulted from your zealous and unremitted endeavours to encrease the means of subsistence to the inhabitants, and to render the island thereby a less expensive tenure to England, I trust you will excuse the liberty I now take of enclosing a letter from Captain Haig, commanding the ship Regent, detailing the advantage he has received for his ship's crew; and of expressing my confident hope of this public address being the means of also adding the culture of the Nopal to the list of your objects of public improvements.

The leaves that Captain Haig has been able to obtain for his crew, are from a prickly *Cactus*, supposed in India, to be a native of the Mauritius, and there used only as a fence before the *Tuna* was generally known and distributed. If these leaves have been found as a vegetable so much superior to the watery poor vegetables procurable for sailors, and these even in inadequate quantity, and at a price too high to be furnished for any length of time, how much superior would the leaves of the Kew Nopal, and of

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the *Cactus Tuna* be found; as the many publications of the late revered Doctor James Anderson, of Madras, have so amply shown.

These publications extensively distributed, and the numerous supplies of Nopal and *Tuna* that were issued at Madras, always with a view of part being landed at this island, as plants that would be of the greatest value to the crews of the large fleets that resort here, and are detained for often a long period of time, from their capability of thriving on the barren inhospitable looking exterior of this island, render it unnecessary for me to say much on this part of the subject, it having engaged so much the attention of the philanthropic Doctor Anderson; and which must be well known here from his many publications received.

Having stated thus much, Honourable Sir, it is impossible for me to avoid mentioning my disappointment at not being able to find one plant of the *Cactus Tuna*, and but a very few of the Kew Nopal: so few as to be more an object of curiosity than utility.

The Kew Nopal being, however, the *Cactus* of most value, both as a plant for rearing the fine cochineal, and therefore called *Cactus Cochinilifer*, as well as its superiority as a vegetable for sea-stock, I hope the endeavour I made while at Madras to support Dr. Anderson's most anxious wish of establishing the culture of the Nopal and *Tuna* as a vegetable, principally for sea-stock, and as a vegetable for the poor, will be some apology for the the liberty I now take in pressing this subject on the attention of the government of St. Helena, and of recommending that a portion of the Botanical Garden, as it is called, in James's Town, may be appropriated for this most useful purpose. I mention this garden as being public property, and from its being enclosed,

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and thereby protected from any depredation by goats, and where nearly an adequate culture of Nopal plants may be made, at little or no expense to government, without much encroaching on the ground that may be thought necessary for the culture of vegetables for the family inhabiting the house there; and if even a small sum was charged on the supplies of Nopal leaves furnished, to reimburse any expense incurred, and for transport, if necessary, to the shipping; I should consider it proper, as attaching some value to the supply, which being furnished *gratis*, might tend to diminish;—such being the general tendency of mankind to prize according to the difficulty of obtainment. I feel the less hesitation in recommending this principal culture in that garden, as its object as a Botanical Garden has been frustrated, and from its limited scale, and the little that is growing in it of a foreign and valuable nature: from the many seeds from many quarters, and particularly from India, that have been forwarded, it would seem badly calculated for the continuance of such an object. But for the culture of the Kew Nopal, it will answer well, the only thriving plants of this *Cactus* being there; the very few at Plantation-house and Long Wood being of so stunted a growth, though long in the ground, as to show that either the ground or the elevation is not favourable to the luxuriant growth of this esculent plant. There is also another species of *Cactus* growing in the Botanical Garden of a large size, what Dr. Anderson called the China Nopal: I wish attention to be paid to this distinction in making plantations, as the Kew Nopal is alone the object of culture as a vegetable; the leaves of the Kew Nopal are more retuse, narrower, and less thick, with fewer and shorter thorns, and the full grown leaves, not too old, are of a dark green, while the other, or China Nopal leaves are of a lighter green, and with a less lucid surface: these distinctions will prevent any

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mistake. There being no *Tuna* plants on the island; and the plant for the fortifications and for the enclosures against the depredations of goats, being what is denominated the Mauritius *Cactus*, I will request some baskets of the *Tuna* leaves, and of *Tuna* seed to be sent here by the first opportunity, in the expectation that it may meet with attention, so as in a few years to form fences and enclosures in James's Valley—thereby affording an equally formidable fence, while its leaves will be a more agreeable vegetable for its more acid nature.

Having now stated, Honourable Sir, all that can be necessary for me to say on the subject of this address, which I trust will meet with your approbation; I will take the liberty of trespassing a little longer on your time, by mentioning what appears to me of import, next in consequence to the increase of agriculture, which has so successfully engaged your attention; the benefits resulting from it, I have heard acknowledged in the most honourable and gratifying manner, by such of the old soldiery as I have met in my excursions, who have uniformly stated, that in the reductions of the prices of articles of food, and particularly in the abundant supply and reduced prices of potatoes, they have subsisted better since your government commenced, than they ever did before.

The government, by taking agriculture on an extensive scale into their own hands have done this general good: but from the wide field that is yet open, the whole of the interior of the island for six or eight miles in every direction, being capable of cultivation, a long perseverance must still be given to make this island what it should be, favoured as it is by situation in the tropic. I almost despair of its being effected, unless there are some small divisions of land, and some villages established in situations where there is water, there being in the interior only

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proprietors of land and slaves, from which there is little stimulus to industry.

It must be evident that the apathy and difficulty of increasing agriculture—of there being no adequate supply of milk, and much less of butter, where there are so many cattle and sheep—and the scanty supply of eggs, where there should be an abundant stock of poultry, can alone be under such circumstances, from there being no lower class of inhabitants dependant on their own industry, and no establishment or settlement for the slaves when grown up.

There are no villages for them, or small spots of ground to cultivate, as is the case in the West Indies.

The Chinese also who are here, are not so much employed in agriculture as in labour. I think an experiment may be made with prospect of future benefit, by establishing men in small communities in a few places on the island, and to insure their industry, by the ready sale of what they may rear, in a public market, giving them premiums at first, and land on perpetual lease, and such annual quit rent after a certain lapse of years, as may be agreed upon; in this manner the government land may be sold with public and private benefit.

But to ensure the moisture and rain, on which extensive agriculture must depend, it will be necessary to clothe the summit of the mountainous ridges in the interior with trees, all the elevated ridges being naked, there being no trees higher than the ridges, by which, clouds are not attracted, nor vapours condensed: the rocky summits of mountains of the exterior, tending still further by their naked surface to keep vapour clouds elevated, by which they are blown past, to fall in rain at sea. The few gum-wood trees which are said to be indigenous, seem to have so little hold of the ground on the sides of the ridges of Diana and High Peak,

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as to be of little value either as a wood of utility, or for firewood. It should therefore be cleared away at Long Wood, where it interferes with agriculture, leaving only intermediate rows for shelter, for it occupies at present, ground capable of agriculture without being of the smallest use, and is not sufficiently elevated to answer the purpose I am recommending: the peaks that should be covered with wood, being elevated far above the level of Long Wood.

As it would be an undertaking of labour and expense, more perhaps than would be given to cover the sides of the ridges towards the summits with wood, I have suggested to some gentlemen, and particularly to Major Hodson, as Arabian dates are sent here for sale (the seeds of which will grow), that if he would put some of these seeds in his pocket on going to these peaks, and make his servants stick them into the rich soil on these elevated ridges, he might clothe them with trees in this easy, slow, but general manner, that would not be eaten by the goats, would take strong root, and from its luxuriant growth in Mysore, which in climate and elevation approaches that of these peaks, there can be little doubt of their thriving, and when any more useful trees can be reared these trees may be cut down or thinned. I have also suggested that the seed of the Guinea grass scattered on these summits would grow and distribute itself, and be the means of affording the best of fodder to the fine English cattle reared on the island.

The fir tree which you have reared with the same view, and mean to distribute at low rates, will be planted where they can be enclosed, and taken care of, but even some of these may be planted on these peaks, and if surrounded with a circular wall for a few feet, may be then left without further care, a few prickly pear leaves covering the top of the enclosure. In India, where

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there is more heat, you must have seen considerable plantations made this way, and as on these peaks there cannot be any other attention required or for watering, a good deal may be done, by employing some of the Chinese in this way. Lower down there are springs, in which many of the forest trees of the Malabar mountains will grow. In furtherance of this object, I will transmit a copy of this letter for introduction in the public prints in India, with the view of soliciting seeds being sent here, and will make particular requests myself to be more certain. I shall request them being directed to the Town Major of St. Helena, to be reported by him, and disposed of as government, or individuals may wish.

It gives me pleasure to learn from you that the fermenting balls which I described in the Madras Gazette of the 22d February, 1812, had been so useful as to afford excellent fermented bread to the fleet that sailed at that period for England. I have not been able to do any thing in the way you wish, of endeavouring to make a similar ferment to improve the bread at St. Helena—not having received the plants I requested, nor a bottle of the juice of the gum-wood tree: but from what I tasted of this juice, I think it will afford all that can be required in this way, it being a saccharine juice, which when allowed to approach the acetous fermentation, will so nearly approach the Cocoa nut or Palmira Toddy, as to be equally useful as a ferment.

On speaking to the baker in James's Town respecting the weakness of his ferment, and of his bread not being sufficiently raised, he attributed the failure to the impurity and badness of the wheat flour: this may certainly be obviated by having grain sent instead of flour, to be ground at St. Helena, by which there would be little danger of its being spoiled or impure. I mention this to show that I have not been inattentive to your wish,

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but as you have taken the subject into consideration, I shall add no more to this already too much extended Letter.

I have the honour to be, with respect, Honourable Sir,
your very obedient Servant,

ANDREW BERRY.

St. Helena, 12th March, 1813.

To Dr. Berry.

DEAR SIR,

As you are well acquainted with the virtue of the Nopal, I send you some that has been gathered by my Lascars on this island; on the arrival of the Regent, I incurred an expense of 18 to 20 shillings per day for a supply of greens for my ship's company, which (consisting entirely of Lascars) was far from being agreeable to them, and having accidentally discovered the Nopal near Major Hodson's house, my men have since constantly preferred using it. I have no doubt that from this preference a more beneficial effect must result to them than from the light waterish kind of greens usually supplied to the shipping; as it is a plant that requires little care in rearing, and scarcely any soil, I think under the auspices of the present Governor, it might be raised in great abundance on the rocks of this island; there are many ships that seldom give potatoes to their Lascars or Chinese; and those nations of India who have once experienced the benefit of its antiscorbutic qualities, will be able to continue it without expense, and when properly strung over a ship's stern, it will afford a good nutriment long after potatoes are decayed.

I am, Dear Sir, your's obediently,

JAMES HAIG.

Ship Regent, March 5th, 1813.

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SECTION XXVII.

Reply to Doctor Berry's Letter — English Husbandry acknowledged by St. Helena Farmers superior to their Own—Soil and Climate peculiarly favourable to Cultivation—Accounts Received of the spreading Property and Re-production of Potatoes upon Islands in the South Seas—Experiments to ascertain these Points—Lead to a Singular and Advantageous Mode of Potatoe Culture in tropical Climates.—Potatoes a good Preparation for Corn Crops. Fishery at St. Helena formerly Productive—Evils of the present System—Improvements suggested. Establishment of Chinese at St. Helena—Differs from that generally adopted—Their Pay, Rations, and Occupations. Trees attract Moisture and Rain—Cultivated Land has a similar Tendency. Experiment in reaping Barley—Wheat —Yields per Acre $10\frac{1}{2}$ *Tons of green Fodder, in two Months from the Time of Sowing — Loss of Weight when hayed,* 100 *Pounds in* 146.— *Hints suggested for ascertaining the relative Moisture imbibed by cultivated and uncultivated Land. — Nurseries of Trees established at St. Helena.—Pineasters preferable to Arabian Date for Cloathing the Summit of the Hills.—Favourable Report of Doctor Berry's Fermenting Balls.*

To Andrew Berry, Esq. M. D.

SIR,

YOUR official letter, dated the 12th of March, contains some judicious remarks and valuable hints which are well deserving attention. These, and the testimony you have borne, in confirmation of opinions I have long held and promulgated, in respect to the capabilities of this island, are highly gratifying to me; for being thus spontaneously offered by one whose long experience in pursuing objects of improvement, similar to those in which I

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have been engaged for nearly five years past, will, no doubt, have some weight with the remaining few; whose minds have yet a bias to the absurd and erroneous idea "that St. Helena is "a barren rock, and can never be made productive."

How can such assertions stand against your declaration of the quantity of land capable of cultivation; against my own opinion (communicated officially) "that between two and three thousand acres are fit for arable land;" and against all that has already been done in the extension of the Company's farms; as well as by the recent laudable exertions of several individuals?

The present crops on Plantation-house farm were lately inspected by one of our principal cultivators. He had long been adverse to a change of system, but he now acknowledges their superiority, and the advantage of using the plough, and expresses astonishment at seeing such exuberance on lands which he had predicted would never repay the expense of bringing into cultivation.

This favourable change of sentiment has, indeed, for some time past, been pretty general: at length it is strengthened and confirmed by incontestible proofs. There can, therefore, be no doubt that the English practice of husbandry will gradually establish itself in all parts of the Island: since it tends to reduce the expense of labour, and to ameliorate the lands. These circumstances will prove highly beneficial to the landholders: particularly if they will seriously turn their minds to those sources of wealth which have been pointed out to them in a paper entitled "On the importance of introducing agriculture on the island of "St. Helena," published in the St. Helena Register for August, 1812.*

Every day produces some further proofs that this soil and cli-

* Vide, Section XIX.

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mate are as favourable as any in the world for cultivation. I need not recapitulate various successful experiments, which I have already published in the St. Helena Registers, on potatoes, barley, oats, and wheat; and on Indian corn, beans, &c. &c.; nor have I leisure to arrange many others that have been completed, or are now in process: yet I cannot deny myself the gratification of relating some circumstances regarding a very cheap method of cultivating potatoes, which originated in information I received from some captains of whaling vessels (who had landed on islands in the southern ocean), and in the present crops at the Plantation-house farm.

Those captains assured me, that they procure potatoes, in abundance, at some of those islands where a few were planted by that distinguished navigator Captain Cook. It may be supposed that in planting them they had not all the advantages of a well prepared and pulverised field: nevertheless they grew, and continue to grow, and now spread over a considerable space of land. This fact of the re-production of potatoes, during a period of forty years, and their spreading property appeared to deserve notice. I accordingly established the following experiment, with a view of ascertaining the second point; but which, however, was not so clearly and satisfactorily determined as the first; and this has given a result far exceeding what I expected.

The deductions that may be formed from a successive re-production during so many years, are of such a nature as will leave no doubt of the possibility of simplifying the potatoe culture at St. Helena (and in all similar climates where vegetation is not checked by frost); and of lessening the charge of labour to a mere trifle in comparison with what is required in the colder climates.

The experiment alluded to was this: on the 18th of June, 1812,

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I marked off two square rods in length, and one in breadth, of potatoes that had been planted in rows on the 20th of January, 1812: the haulm was completely fallen. Each row, in this oblong space, measured 33 feet in length; and there were twelve rows in the breadth. With a view of ascertaining the spreading property of potatoes, I took up six intermediate rows; leaving the same number for re-production. The six rows taken up yielded 78 pounds of small potatoes, or at the rate of 13 pounds from each 33 feet of row, or 223 bushels per acre.*

Five months afterwards, that is on the 20th of November, and some weeks after the haulm had again completely fallen, the six rows which were left in the soil, were also taken up. These yielded, of very fine large potatoes, 292 pounds. Thus, the increase, by leaving the crop in the ground, was in the proportion of 78 to 292, or from 223 bushels to 834 per acre. This calculation is on a supposition that if the six first rows had remained, their produce would have also increased to 292 pounds.

Besides this large produce in potatoes, the preceding crop was plainly discovered by the seed being entire, and of a darkish hue, and in some degree shriveled. These seed potatoes were separated, and weighed 75 pounds; and, although not marketable, have been eaten by hogs. Wherefore, by retaining a crop in the ground, when not likely to be productive, or for which there is not a ready sale, it is proved that very little of it is lost, and a very great produce may be expected from the succeeding crop.

From this statement it will be seen that the difference between the produce of the six rows on the 18th of June, and the seed potatoes gathered from the remaining six rows on the 20th of November, was no more than three pounds: the former being 78 pounds, and the latter 75.

* A St. Helena bushel is 56 pounds avoirdupois.

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The experiment I have now detailed, led to another: which is, indeed, the old-established practice on this island; and which, on my arrival here, I was disposed to condemn, as being so very opposite to English husbandry.

This practice is to leave in the ground, at the time of taking up potatoes, a sufficiency of seed for the following crop, and this is called "a self-sown crop."

Comparing a crop of several acres of the Church fields, treated in this manner, there is at present every appearance of its being even superior to a part of the same field that was regularly planted in rows, and with seed from the same crop as that left in the ground. This "self-sown crop" is, indeed, much more forward: which may be easily explained. It is evident that the seed, by remaining in the soil, had suffered no check in vegetation: whereas the other seed, by being taken up and exposed to the air in a building, for several weeks previously to being planted, must have been drier, and therefore less susceptible of the powers of vegetation, at the time they come into action in the regular course of nature.

Hence it is obvious that a succession of crops of potatoes may be obtained here, after a field has once been brought into cultivation, without any other expense than taking them up, and then harrowing the field. All that is necessary is to leave the requisite quantity of *small seed* potatoes in the ground at the time of taking up; and I would recommend that the gathering of the crops should be postponed as long as possible, so that the potatoes, to be left in the soil, may receive some check in vegetation, by which the new crops may more nearly meet the most favourable seasons for vegetation; that is, in the rainy months.

By this simple mode of cultivation, there would be no less than six expensive operations saved to the farmer; the first is, the

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taking up the seed; the second, carrying it to the store-room; the third, returning it to the field; the fourth, opening the furrows; the fifth, putting in the seed; and the sixth, covering the seed.

When all these circumstances are duly considered, it must be admitted that the saving of labour in the culture of ptoatoes on the island of St. Helena, would be immense; and consequently that this essential article of food, for man and cattle, *ought to be* in the greatest abundance, and at very moderate prices; particularly as St. Helena tenants are neither subjected to high rents, nor to poor-rates, nor to taxes of various descriptions, which bear hard upon English farmers.

These observations on potatoes will shew how little labour is required to bring the new lands into cultivation for corn; for after enclosing, and paring, and burning the sward, spreading the ashes, and twice ploughing and harrowing, the furrows are opened with the plough, the seed dropped in them, and then covered. These last operations are, in fact, a third ploughing; which will bring the land into the finest state of pulverization; and no further trouble, as I have already noticed, will be required for the two or three following crops, than to take them up with the plough about three weeks after the haulm has fallen; leaving a sufficiency of small potatoes for seed. After the third or fourth crop is gathered, the land may be sown with barley-wheat, without danger from grub or other insects. This process has been successfully pursued at the Plantation-house farm: but if corn be attempted as a first crop, there is great risk of losing it by the ravages of the grub; this is the case in other countries as well as at St. Helena.

You must have observed, from the printed papers I occasionally transmitted to you whilst at Madras, that the main objects of my

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agricultural pursuits have been the extensive cultivation of corn, potatoes, and all sorts of esculents. The minute details I have given of many successful experiments on a variety of island products, cannot fail in carrying conviction to the mind of every reasonable man, that my views for the improvement of the island, are by no means speculative: being founded on the solid basis of facts incontrovertibly established: and which is, unquestionably, the surest mode of guarding against error.

There are, however, many other points that merit attention. Every thing that tends to increase our internal resources for the support of the inhabitants, or for administering to their comforts, or for the refreshment of ships, is undoubtedly deserving a place in the system that is now carrying on; and which, if pursued with ardour, will ultimately prove of infinite advantage to the landholders, and will tend to relieve this island (in a great degree at least) from its present dependence on other countries.

The virtues of the different species of Nopal, as an antidote for scorbutic disorders, have been so well established by the publications of your worthy relative, the philanthropic and much respected Doctor Anderson, and the advantages Captain Haig derived from the prickly *Cactus*, which abounds on Ladder Hill, and many other *dry places* here, afford the strongest arguments in favour of your suggestions on this subject. Due attention shall, therefore, be paid to the appropriation of a part of the Botanic Garden as a nursery for the Kew Nopal; from whence, after being naturalised to the climate, it might readily be transplanted to the sides of the hills on either side of James' Town: which would serve for utility as well as ornament, and would also be conveniently situated for the supply of shipping.

The prickly, or Mauritius, *Cactus*, is apparently a hardy species. It grows well even upon the rocky surface, and the sides

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of Ladder Hill; and thrives in a colder temperature, both to the northward and southward of Plantation-house, as well as at Long Wood. The hedges that have been already formed at those places, will soon become nurseries for its further propagation; and as it possesses a triple advantage, by making the most impervious fences, by being useful as a vegetable, and by guarding itself against goats and other animals, I think that every means should be used to extend its culture.

The plants already growing on Ladder Hill, cover several acres. I shall recommend that the leaves of these, at proper seasons, should be planted all down the north-east point of the mountain: in order that ample supplies of this *Cactus* may be at hand for the shipping.

I acknowledge my obligations to you for your endeavours to send supplies of the Nopal and *Tuna* to this island: but of all you sent, I received no more than sixteen leaves. These arrived in the rainy season, and were immediately put in the soil, but most of them were destroyed by white maggots that had bred in them, which I think is a strong proof they do not delight in moisture.

I concur in your idea that the establishment of a few villages in the interior would be desirable; but this plan cannot conveniently be carried into effect until husbandry is farther advanced; for at present most of the necessaries of subsistence, excepting potatoes and vegetables, are brought from James's Town: but when pork shall be raised at the farms, together with grain for feeding poultry and hogs, and wheat also raised, and ground in the interior into flour, the convenience of country habitations will be far greater than at present.

It is certainly a most serious evil that we have scarcely any class of inhabitants who are solely dependant on their own

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industry. Almost all are paid, clothed, and fed; and it is to this evil may be traced the want of adequate supplies of milk and butter, of poultry and eggs, and I may well add of fish: for if there were persons here, whose existence solely depended on their exertions to provide those articles, they would be in the greatest plenty, and at reasonable prices. The fishery is, indeed, upon the most wretched system. The boats are private property. The fishermen, in general, are either soldiers or slaves; and as both are clothed and fed, and the former paid, what stimulus can they possibly have to exertion? They set out in the evening, and have the option of being active, or of going to sleep in the boats; and if they return in the morning with a very scanty supply, they imagine they have done all that could be expected; or if they have caught more than they bring to the landing place, the surplus is either sold on shore for money, or to the shipping at the anchorage for spirits. Thus the present St. Helena fishery is unproductive; tends to promote idleness, dishonesty, and intemperance: and it costs the annual labour of 130 able men: who, after a night's fishing, or sleeping and drinking, in the boats, are little disposed to labour during the day.

I am of opinion that thirty or forty expert fishermen, ***having an interest in their labour*** (upon an establishment similar to a South Sea whaler), farming the fishery at a very moderate rate, merely to give an exclusive privilege (as at Batavia, and I believe Columbo), would bring more fish to the inhabitants, and to the market, than the total number of men above-mentioned. This may be fairly presumed, from the comparatively great success of the gentlemen fishing parties when they return from a night's amusement.

From what has been said, you may perceive that a plan might easily be formed for availing ourselves of those innumerable

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bounties of nature, which are so abundantly spread around this small island. It is said, that not less than seventy-six different kinds of fish are in these seas,* some of which are large, and of excellent quality: and if double or triple the quantity that is now supplied to individuals, could, by any means, be procured, it would evidently diminish the demand for imported beef and pork. †

* The fish most commonly taken and used, are mackarel, albacore, cavalloes, jacks, congers, soldiers, yellow tail, old wives, and bull's eyes; and of shell-fish, stumps and long legs.

† During the active and meritorious administration of Governor Byfield, between the years 1727 and 1731, the quantity of fish caught was more than the blacks could consume. The consequences are stated to have been very advantageous to the Company's interests, by reducing (or rather withdrawing) the demand for salt beef and pork: and it seems the health of those who had formerly subsisted on salted meat, was much improved by a change of diet to fish and potatoes.

If we suppose a population of 3600 to consume 2400 pounds of fish per day, and the established average price to be two-pence per pound, instead of the present rates, the value would be 20*l.* per day, or more than 7000*l.* a year. This, exclusive of salting fish, would be a good speculation for a few professed fishermen from England; having proper fishing-boats like those used at Brighton. In these they might anchor at the distant fishing banks, and daily send on shore the fish in the smaller boats

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Extracts from the General Letters to England regarding the Fishery, 1727 to 1731.

1727. *May* 6th. Paragraph 36. "We have taken care that your blacks have always had their belly full of provision. We still get fish in great plenty, and have done so the year round, and in the coldest weather; and don't at all doubt of getting the like plenty this year; for we don't loiter our time and dream out our days, but attend to our duty and mind your interest. If the fish, in cold weather, go a great way out into deep water, where our yawls can't lay, we get coarse salt on the mountains, fit out our long-boat, and go after them, and catch what we want, and salt them upon the spot; and it often happens that they return with a very great quantity of neat fish, after their guts are out and their heads off. Those who say otherwise deceive you: what we write is truth."

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In respect to the Chinese, they are a good deal employed in agriculture; that is, in fencing the lands, in paring and burning,

Paragraph 27. "No care is wanting to keep your blacks in heart, that they may be able to labour: and for this last twelvemonth, in which they have been fed with fish, have been more healthy than in any one year."

1728-9, *February 22d.* Paragraph 7. "Your Honours' slaves, of whom we had the misfortune to loose five, together with the long-boat, as they were going for lime (as your Honours will see in our consultation of the 29th of October), have enjoyed their health since they have been fed with fish remarkably better than they ever did, when, at a very great expense, they were allowed salt provisions: and we have had, and still have, such good fortune in our fishery, that we weekly catch more than they can well consume, and doubt not but our faithful endeavours to secure your Honours from any charge upon this account, will be attended with the like good success for the time to come: so that those who formerly told your Honours that fish were not to be had the year round, did it on purpose to deceive you: or knew not what they said—which latter seems most likely.

March 30th. Paragraph 24. "We have still such good luck in our fishery, that we often catch more than your blacks can eat; and we will be particularly careful to save your Honours the heavy charge of salt beef and pork."

1729, *December 10th.* Paragraph 6. "Your slaves continue to thrive upon their diet of fish and potatoes. We hear very little now of fluxes, aching bones, or pains in the belly, though when they were fed with salt provisions, it was common to have 20 or 30 of them laid up at a time. Their food is now wholesome and not expensive; the great plenty of fish which we still continue to catch, having effectually secured you from the former heavy charge of salt meat, and we faithfully assure your Honours we have exerted ourselves in such manner, that there is no likelihood you should again be at that expense; it was what gave us great disturbance and uneasiness, and we could not rest till we ha found means to remedy it."

1730, *April 19th.* Paragraph 18. "We continue to catch fish in great plenty, with which your blacks are very well pleased."

May 26th. Paragraph 2. "In our several letters this season we have been so full and particular in our account of matters of most consequence, that we have little material to lay before you now; that of greatest moment is, to acquaint your Honours that having, with great pains and industry, supplied your blacks for these last three years with great plenty of fish, the greatest part of that superfluous chargeable cargo of salt provisions, sent for by Mr. Smith, at a great expense to your Honours, lies upon our hands unsold."

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in driving carts, in planting and gathering potatoes, and many other offices; and some are already become expert ploughmen. But the establishment here is necessarily different from that in any other place. At Java, at Prince of Wales' Island, and other settlements, I am told, they are the leading persons in farming: and at Ceylon this was unsuccessfully attempted; for they cultivated nothing more than for their own immediate wants, and were, in consequence of little service to that colony. If provisions were cheap, the experiment might be worth a trial here: but, in the present state of St. Helena, it would certainly fail; because, if Chinese had lands, they would do as their neighbours; for it could not be expected they would sell at *lower* prices. It was these considerations that induced me to form them into a regular establishment. The Company pay the labourers a shilling a day, and find them in rations; and by this mode, their military services may be at command, and very useful in aiding the corps of artillery, in dragging of cannon, and carriage of ammunition; in short, in employments similar to those of the artillery Lascars in India. As they are all placed under the direction of European overseers, it cannot be doubted that much more labour is obtained from them than if they were left to themselves. This mode of management, the Rt. Honourable Lieutenant-General Maitland admitted was far better than that he had introduced on the island of Ceylon, by giving them lots of land. It is the mode I recommend, as the most advisable *at first*, in all places where Chinese may be introduced; and where the prices of the products of the

1731, *April 2d.* Paragraph 17. "We will dispose of the salt beef as well as we can; the blacks will little want it, for we still continue to catch fish in great plenty, and that yearly saves your Honours a great sum.

December 28th. Paragraph 6. "We have still good luck in our fishery the year round; upon which, and beef and pork, your blacks are plentifully fed."

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lands are high; and particularly if the object should be, through their means to reduce those prices.

Your observations on the attraction of moisture and rain, appear to be judicious. Trees have usually been recommended for that purpose. I am of opinion, however, that cultivation has also a tendency to produce the same effect; and in proportion to the extension of arable fields, so will be the increase of moisture. This will readily be conceived by attention to the following facts.

On the 5th of May last, I cut down a square rod of barley wheat, that had been two months in the ground, from the time of sowing. The produce in a green state, was 146 pounds, or about $10\frac{1}{2}$ tons per acre. It was carefully collected and dried in the air, until the 26th of May, when it weighed no more than 46 pounds; consequently, 100 pounds of moisture had been evaporated; and if only half this weight be supposed to have been, at the time of cutting, absorbed in the soil and roots, under the thick shade of an exuberant crop, the total quantity of moisture would be 150 pounds on a square rod, or above ten tons upon an acre. These circumstances lead me to believe there is a more accurate mode of determining the comparative moisture, on ploughed and unploughed lands, than by the vapour glasses lately introduced in England.

As the planting of trees, for useful timber and fuel, is an important object here, I have always intended it should keep pace with cultivation. During the last four years several thousand pineasters and oaks have been set out, and there are still a good many in the nurseries. This year the nurseries are to be established on a larger scale. Every cone from the pineaster and cypress trees at Plantation-house has been collected, as well as the seeds of the Botany Bay willow. These trees, and the indigenous red wood, together with the largest species of Morgossa

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(*Melia Azederach**) are, without exception, the finest trees for this island. Their growth is rapid; they are all evergreens; stand the trade wind in the most exposed situations, are extremely ornamental, and most of them are equally useful for timber as for fuel. Under all these advantages, I should prefer them to the Arabian date for clothing the summits and sides of the highest ridges; and as upon these there is a cooler temperature, and a greater degree of moisture, it may be expected they would grow with more luxuriance than those in the vicinity of Plantation-house. I do not, however, object to the Arabian date, since it would tend to the objects in view, and would be a valuable acquisition to the fruit trees of St. Helena.

The fermenting balls which you described in the Madras Gazette, of the 22d of February, 1812, were found to surpass even your most sanguine expectations. Some of the passengers in a ship where they were daily used, assured me, that, during the voyage to St. Helena, they had the lightest and finest bread they ever tasted on board ship: they compared their breakfast rolls to

* I have, at present, some beautiful specimens of the *Melia*, from seed received from Dr. Roxburgh, which was sown on the 26th of February, 1812. The young trees were transplanted on the 3d of October, 1812, and some are now three feet high, spreading out horizontal branches, and forming a thick foliage about four feet in diameter. The young trees when transplanted at seven months growth, had tap-roots, like a small parsnip. These roots were as long as the stems above ground, and both together, of the largest plants, measured from 18 to 24 inches. They are, therefore, peculiarly suited to this climate; and are, by far, the best of all the Indian trees I have received. Neither the Teak nor Sissoo seed, nor any other of the many timber trees, for which I am indebted to Dr. Roxburgh's kindness and attention have succeeded at Plantation-house; notwithstanding they were sown and treated according to his directions. However, the trees I have enumerated would be sufficient for every purpose; and if the planting system be followed up, St. Helena, in the course of even twenty years, would yield a considerable supply of useful timber, and abound with fuel.

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the French rolls in London. I should hope that a similar ferment may be produced here, by following your directions, and using the juice of the gum-wood tree, as you recommend, as a substitute for the Palmira, or cocoa-nut toddy.

Permit me to conclude, by expressing my best acknowledgments and thanks for your suggestions, and for the interest you take in the welfare of this island. I have endeavoured to make some return, by conveying to you such information as I conceived might be acceptable.

I am, Sir,

your most obedient, humble Servant,

ALEXANDER BEATSON.

St. Helena, 17*th April*, 1813.

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SECTION XXVIII.

Mr. Miller's Directions for rearing Scotch Pine are applicable to the Pineaster—St. Helena Pineaster Wood described—weightier than common Fir—thrives upon poor Soil—average Growth about two Feet in the Year—sometimes grows more than three Feet. Plantations of Firs at St. Helena more profitable than in Europe—Computation of their Value in twenty Years. Negligence and Inattention to the planting Law much to be regretted—The fittest Trees for St. Helena Plantations enumerated—Further Notices upon the Growth of Trees—and upon the necessity of extirpating Goats, and tending Sheep.

MR. MILLER'S directions for planting the Scotch pine are in general applicable to the Pineaster, which is the species of pine growing at Plantation-house, and at other places on this island. This is described in Miller's Gardener's Dictionary. "*Pine* "*tree with two thick smooth leaves in each sheath, and pyramidal* "*acute cones; the Wild Pine, or Pineaster.*"

The wood of St. Helena pineaster of twenty-four years growth, which has the appearance of pale mahogany, is weightier than common fir, in the proportion of 6 to 5, and apparently surpasses in quality all the sorts that are usually imported here. It grows even upon poor, hard, clay soil, and consequently may be cultivated with better success in many places: but particularly about the middle of the island, where there is better soil, more moisture, and a cooler temperature.

According to personal observation and particular attention to pineasters of different ages, I have observed that, in general, their average growth is about two feet in the year. This is upon dry

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land: upon better soil, the growth would no doubt be quicker; for, in some cases, I have seen them shoot three feet in twelve months. A good many of these trees may be seen at the east side of the lawn at Plantation-house, which are already well grown. The seed-bed was sown in May, 1809, and the young trees transplanted in May, 1810: one of which, in four years, already measures ten feet eleven inches high. Even this small specimen of a pineaster plantation is sufficient to shew the advantages that would, in a few years, be derived from the establishment of large plantations. Judging from the size of some pineasters, planted by Colonel Patton, about eight or nine years ago, I am of opinion that the *first thinning* of St. Helena plantations might take place in nine years from the seed; at which time, the stems would yield many pieces of small timber, fit for a variety of purposes; and the branches would furnish abundance of excellent fuel; an article at present so very scarce on this island.

According to Mr. Miller, the first thinning, in the northern climates, takes place at sixteen or eighteen years growth; because, he says, they are four years old when transplanted: but here they are set out after being about ten months, or one year, in the seed-bed. I conceive their quick growth in this climate, may be ascribed to the powers of vegetation not being at any time suspended: which is not the case in cold and frosty regions.

The advantages therefore of forming plantations of firs at St. Helena are much greater than in Europe; the expenses will be much sooner reimbursed; and the best trees, being left for growing timber, will be of great value; and at this island would establish fortunes for the younger branches of even the present generation.

It may not be unprofitable to take a view of the advantage that would accrue from the proposed plantations. The result will, I trust, operate as a powerful stimulus to exertion, and will, I hope,

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keep up that spirit for planting which has happily this year shewn itself, by many applications for trees from the Plantation-house garden. Seven thousand one hundred and eighty-four fine young plants have, within these few days, been distributed in various parts of the island. These will very soon determine the best sites for the plantations. That number, and about four thousand transplanted during the years 1811 and 1812, make, collectively, an addition of above 11,000 pineasters to this island: the value of these, in twenty years, according to the following computation, may be estimated at about £12,500. sterling.

I will suppose a landholder to establish a plantation of only *two acres* upon land at present useless: and according to Mr. Miller's directions, that he places the trees at the distance of four feet. In this case, each acre will contain 2722 trees, say 2500, or 5000 in the two acres.

After nine years growth the thinning of the plantation would yield 2500 trees, about 18 feet high; and worth as timber and fuel 10*s*. each, or - - -	£1,250
2500 trees of standing timber, at twenty years growth, estimated at 40*s*. each - - - -	5,000
Total value of two acres at 20 years growth	£6,250

But if we take a more enlarged view of the proposed plantations, the advantages will appear immense. Supposing then that the old planting law, requiring one acre in ten to be planted with trees, so often repeated, but never attended to, had been enforced; and that those trees had been pineasters, and planted twenty years ago. The quantity of land thus planted would have been 600 acres, having 1250 trees of standing timber upon each acre, or 750,000 trees upon the 600. These, at twenty years growth, are certainly undervalued at St. Helena, when reckoned at only 40*s*.

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each; consequently their value at the present time would have been at least £1,500,000.: this is exclusive of immense quantities of fuel that would also have been furnished by thinning the plantations during that period.

How much then have the present generation cause to lament the negligence and inattention of their fathers! If those plantations had been established, fuel would have been, during the last twenty years, in abundance; and there would have been enough to supply the numerous ships that annually touch here; whilst the aspect of the island would have been beautified: and in all probability an improvement in the climate effected, by the attraction of a greater degree of moisture from such extensive plantations.

Surely these reflections are enough to rouse the attention of the present landholders; and as every facility will, in future, be given to forward so laudable an object, by establishing proper nurseries in the Company's gardens at Plantation-house, from which all the fittest sort of trees for this climate will be supplied, at moderate rates, I therefore entertain a sanguine hope that the present beginnings will be pursued with ardour.

If, after what has been said, and I hope clearly demonstrated, there should be any occupier of land, who is not impressed with a conviction of the infinite importance of plantations of pineaster and other useful trees, and who does not exert himself in rearing them, I should consider such a man as totally blind to his own interests; regardless of himself and family; and of little or no use to the community of which he is a member.

I cannot quit this subject without again adverting to what has been stated in my letter to Dr. Berry, in pages 15 and 16 of the last month's Register.* Experience, during five years past, has clearly shewn that the pineaster, stone pine, cypress, Botany Bay

* Section XXVII.

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willow, the indigenous red wood, and the large species of Morgossa (*Melia azederach*), are without exception, the very best trees for this island. They are of quick growth, and all evergreens; they stand the trade wind in the most exposed situations; and most of them are equally useful for timber as for fuel. To this list I may venture to add the *Bois noir*, or black wood. Of this tree I lately received some seed from Governor Farquhar at the Isle of France, who is of opinion that the black wood might be a valuable acquisition to the St. Helena plantations. So far as I can at present judge, I have reason to believe it will succeed admirably. The young plants are already finely come up, and are much more forward than any other of the seeds that were sown at the same time. "The *Bois noir*, at the Isle of France, "is beautiful during nine months of the year, grows surprisingly "quick, and yields a timber that is excellent for ship-building, "and other valuable purposes."

Of the trees I have here enumerated, there is, I believe, only one (the *Morgossa*) which is fit for underwoods; and as these would be extremely serviceable for fuel, because they re-produce after being cut down, I would recommend extensive plantations of Morgossa, China peach, island peach, fig, guava, orange, and lemon trees, all of which bear cutting, and, after being once established, would yield a succession of fuel for many years.

Plantains, too, are deserving attention. If the low grounds, where there is a good supply of water, were filled with groves of this excellent fruit, they would not only be a great acquisition as food for man, but their stems would yield, after the fruit is ripe, abundance of nutritious fodder for cattle; which would secure the landholders from such ruinous losses in cattle as have, at times, occurred in seasons of drought; and which I am fully convinced, from all I have read on this subject, and from the successful trials

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I have made of green-fodder crops from corn, are entirely to be ascribed to improvident management, and to depending solely on pasture lands.

I shall conclude these observations with the following notices, regarding the growth of trees on the island of St. Helena, which are recorded in my journal.

February 9th, 1813.—At Long Wood there are some China peach trees, on the east side of the offices behind the house (a very exposed situation), raised from peach stones put in the soil by Colonel Broughton about four years ago. These trees blossomed last year, but had no fruit. At present they are ten to twelve feet high, and have a good many peaches on them. This proves that very valuable orchards of peaches might speedily be raised at St. Helena. A few acres, planted in sheltered and warm situations with peach stones at four feet asunder, would be much sooner productive of fruit; and when thinned, at four or five years growth from the seed, would yield plenty of fuel: and the best trees being left, would continue for many years to produce great abundance of fruit, which would be serviceable to the inhabitants and shipping, and what might be to spare would afford an admirable food for hogs; as these animals are extremely fond of the fruit, and more so of the kernels, they might be suffered to range in the peach orchards as they do amongst oak trees in England. Thus they might be fed, during January, February, and March, without any expense to the proprietors.

These observations apply equally to orchards of figs and guavas; which come in season immediately after the peaches, and would give a further supply of food to those animals during the three following months.

Some young pineasters which Colonel Broughton received from the seed-bed at Plantation-house, sown in May, 1809, are now,

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at three years and a half growth, 9½ feet high. Some red wood trees of the same age are from 6 to 8 feet high, with fine straight stems now in red blossom.

May 20th, 1813.—At Plantation-house there is amongst the pineasters sown in May, 1809, and transplanted in May, 1810, a remarkable fine tree which this day, in four years, measures ten feet eleven inches. Some Morgossa trees (the seed of which was sown on the 26th of February, 1812), transplanted the 3d of October, measure 3½ feet high; with horizontal branches which cover a space of 4½ feet in diameter. This is a surprising growth in fifteen months from the seed. I also this day measured a beautiful young cypress which was a seed on the 8th of April, 1811, and transplanted on the 2d of July, 1812, and has now attained the height of four feet and five inches. These few notices may be of use hereafter to refer to; and are, undoubtedly, sufficient to convince all unbiassed persons here, and elsewhere, of the facility with which plantations of useful timber, and of fruit trees, might be raised at St. Helena. It is, indeed, much to be lamented, that any obstruction whatever should stand in the way of these extensive and valuable improvements. If the goats are not exterminated, and the sheep tamed and tended, there is but too much reason to apprehend that those animals will be a constant source of vexation and loss, to those who have really a desire to contribute their efforts to the general good of the island.

May 20th, 1813.

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SECTION XXIX.

Means of collecting Water on the driest Parts of the Island, and Observations on the Advantages resulting from this Practice.

In the year 1809, I made an attempt to introduce the Indian mode of forming tanks, or reservoirs, by means of a mound or embankment. It seemed very practicable; but the soil not being sufficiently tenacious for retaining water, the first trial did not succeed; a second, however, was completely successful, and affords a positive demonstration of the practicability of retaining water, collected during the rains, in even the most barren and driest parts of the island.

This had long been a desideratum at St. Helena; and as nothing tends more to general improvement of a country than the introduction of water in those places, capable of cultivation, which are destitute of natural supplies of this element, I shall here give an account of the successful method which has been carried into effect; and which already has rendered a considerable portion of land fit for habitation and other useful purposes; which, before the formation of the reservoir, had always been considered as barren and unprofitable. This reservoir was originally intended for the supply of the soldiers composing the garrison of Ladder Hill; who, ever since a military post was established there, had been stinted in the supply of water, on account of the laborious task allotted them of bringing it in kegs from James' Town. To relieve them from this fatigue, and to furnish an adequate supply, a tank has been formed on the south side of High Knoll, which, by means of small channels cut on

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this hill, as well as on the adjoining hill, called " Merrimans," will receive the whole of the rains that fall on a space of several acres. As those hills are mostly covered with grass, the rain water which runs from their declivities, is much cleaner than that from the more level surface of Ladder Hill; where, for want of vegetation, the soil is readily loosened, and carried off by the streams; which are, at all times, extremely muddy.

The tank, or reservoir, has been excavated in stiff clay, at the distance of 2800 yards from the new fortifications on Ladder Hill. The prevailing south-east wind, coming down a valley immediately beyond it, keeps the water in constant agitation, and prevents it becoming stagnant or muddy. As the descent from the tank to the fortifications is one foot in ten, the stream moves quickly. A cut stone water course has been laid the whole of the distance. At those places where the ground is tolerably even, it is raised about six inches above the surface. The small ravines, or gullies, are crossed by walls, having openings or gutters for the free passage of the rain, under the water course, so as to prevent the muddy water from Ladder Hill, mixing with the purer stream from the tank. The reservoir contains about 4000 tons; and as it may be expected to be filled twice a year, (during the two rainy seasons) the total annual supply will be about 8000 tons. Allowing 10 tons a day for Ladder Hill, there would remain 4 or 5000 tons for any intermediate gardens; or for cottages that may hereafter be erected between High Knoll and Ladder Hill. The whole of Ladder Hill, comprising about 300 acres, has ever been devoid of water, and of no value whatever; but as a few small cisterns at proper distances can be established near the choicest spots of land, they may possibly invite persons to build and to cultivate. It seems to me that the culture of the melon, pumpkin, grape, and all sorts of esculents, might be carried on

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extensively; not by the costly mode of breaking up a great part of the land, and clearing it of rocks and stones, but merely by digging holes two or three feet in diameter, and filling them with good mould and manure. This method, with occasional watering, and particularly in situations sheltered from the south-east wind, would promote the growth of many sorts of vegetables; and by thus having water, passing through this, at present desert tract, there might be many places selected, suitable to the purposes of cultivation, and of rearing hogs, poultry, &c.

To form some idea of the immense quantities of pumpkins that might be raised in the manner I have suggested, and which would not only be a valuable acquisition to shipping, but a cheap food for hogs, it will be sufficient to state, that from a dry bank at Plantation-house, of light soil, measuring 360 feet by 12,* in which holes were dug, and a few seeds sown in October, 1810, there was, from the first crop, a return of 3583 pounds of excellent pumpkins: several of which weighed 70 pounds each. I have been informed that this produce is even inferior to that which has been obtained in other places of this island.

* This being 4300 square feet, is about the tenth part of an acre; the produce would therefore be about 35,000 pounds of pumpkins per acre. The seeds were sown on the 27th of October, 1810, and the last of the crop was gathered on the 9th of July, 1811. Mr. Henry Alexander, Colonial Secretary at the Cape of Good Hope, informed me that the Dutch farmers there sow pumpkin seed amongst their corn, and by this means obtain a double crop. This practice is deserving attention on this island.

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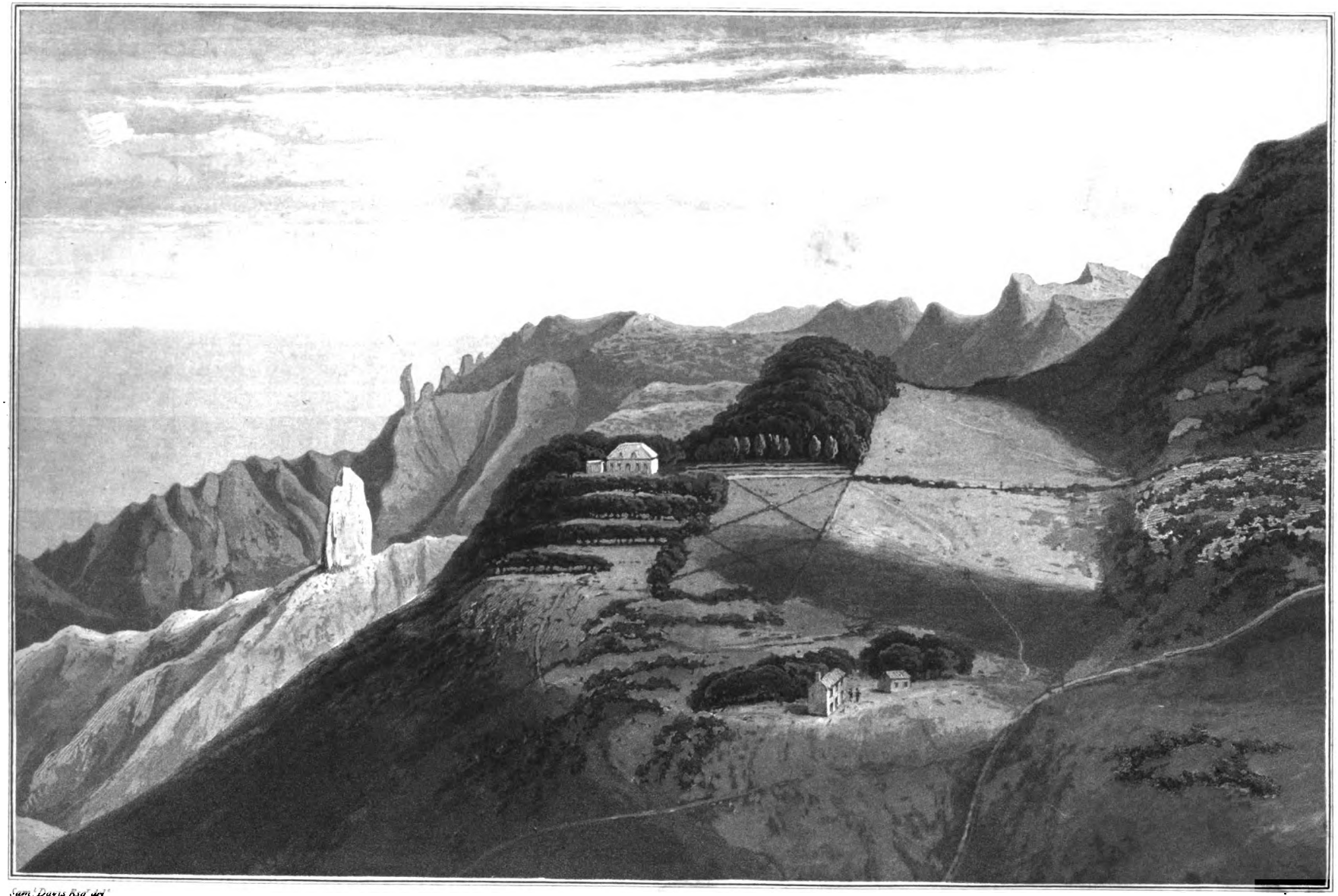

Sam.l Davis Esq.r del.t

Wm Daniell recat

View towards Sandy bay, St. Helena.

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SECTION XXX.

Further Observations on the Importance of planting Trees at St. Helena.

THE importance of introducing, on this island, extensive plantations of trees, for the purposes of timber and fuel, has been so frequently brought to the notice of the landholders, through the medium of the St. Helena Register, that it seemed scarcely requisite to add any thing more upon this subject; particularly as a spirit for planting has been evinced, which may lead to great improvements, and prove highly beneficial to the present, as well as future generations.

Lately, however, I met with a paper upon Mr. Curwen's plantations. It is indeed truly applicable to the circumstances of this island; and as it contains the result of experience, and the opinions of a respectable individual who has very largely engaged in the improvement of his estates by "*making plantations on many indifferent mountain pasture lands,*" I am inclined to think this communication will attract attention.

The account of Mr. Curwen's plantations is peculiarly calculated to confirm that laudable spirit which has been awakened, to stimulate exertion, and to impress on the minds of those, who may entertain doubts as to the advantages of converting some of their hill lands into plantations, that "no speculation can hold out a more flattering prospect."

But, the prospect here is far more promising than that inferred by Mr. Curwen. Let any one examine, and duly consider the deductions which have been given in the Register for July, 1811,

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p. 17;* let him compare the facts on which those deductions are founded—let him look at those trees, the growth of which has been recorded—and he will, I trust, find the reasoning incontrovertible: besides, in regard to the trees that have been noticed, of twenty-six years growth, it is proper here to observe, that there is not one that has been treated as it ought to have been: they have all been placed too much asunder, and thereby deprived of the advantage of sheltering each other, and of being drawn up into straight timber. Their stems have been denuded of their branches to the height of 18 or 20 feet; the soil in which they grow has been thereby too much exposed to the sun's rays, and from these causes there cannot be a doubt they have received a considerable check. Had they been planted and treated according to Mr. Miller, there is good reason to believe they would succeed better: but taking them as they are, they are now valuable, both for timber and fuel.

Mr. Curwen estimates his trees at sixty years growth, and their value at three hundred pounds per acre. The estimate I have taken is at twenty years only; and the value (at this island price of timber and fuel) exceeds ten times that sum. What a vast encouragement is this to a speculation which is generally admitted in England to be one of the most profitable, in which a landholder can engage!

When it is considered also that a single individual (Mr. Johnes of Havod) has formed the resolution of planting one million of trees annually, ought not this to stimulate the united efforts of the seventy landholders of St. Helena? who might assuredly, with ease accomplish *one tenth* of this number every year. If such a resolution were adopted by them, it would, in the course of a few years render St. Helena abundant in fuel; and in twenty years,

* Section XXVIII.

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or less, there would be a sufficient quantity of timber for all the various purposes required in buildings and at the farms.

The object of plantations is indeed so important in every point of view, the certainty of success on this island, so clearly established on the basis of facts, and the advantageous consequences that would be felt by the Lords Proprietors, as well as individuals, so very great that it deserves the most serious attention, and in my opinion, ought to call forth every possible exertion, both public and private (for some years to come) in order to restore wood to this long neglected and denuded spot.

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PART II.

NARRATIVE OF THE MUTINY,

IN DECEMBER, 1811.

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PART II.

NARRATIVE OF THE MUTINY, IN DECEMBER, 1811.

Colonel Beatson's Report to the Honourable the Court of Directors for the Affairs of the United East India Company.

HONOURABLE SIRS,

A MOST daring mutiny having broken out in the St. Helena infantry, on the night of the 23d ult. for the avowed purpose of seizing my person, and subverting this government, it becomes my duty to lay before you a general view of the causes which led to these licentious, and highly criminal proceedings; together with a detail of every circumstance that occurred, as well as the measures I adopted, from the commencement of the mutiny, until the surrender of the mutineers; which happily led to the complete re-establishment of military subordination.

Your Honourable Court is well aware of the state of St. Helena at the time you did me the honour to appoint me to this government. On my arrival in July, 1808, I found a population of 3600 living almost wholly upon the public stores; and obtaining most of the necessaries of life in profusion, at prices not exceeding one third of the prime cost. The consequences of so unprecedented a system (as might naturally be expected) were the neglect of cultivation,—the decline of industry,—and an immense augmentation in the annual charges of the island.

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This augmentation between the years 1800 and 1808, had been gradually progressive from £51,030. to £114,961. per annum.*

* The sums *L*51,030. and *L*114,961. are the "net charges." Freight and contingent losses upon provisions, and stores, received annually from England, India, and China, being settled at the India-house, are not included in the island accounts.

Rating freight from India at *L*30. per ton (which is less than the average in time of war) and adding this rate, and the contingent expences, to *L*114,961. in 1808, I find the actual charges of that year amounted to *L*157,356.; and if the same proportion of freight, &c. be added to *L*51,030. in 1800, the total is *L*69,000.; consequently the charges of this small island had risen from *L*69,000. in 1800, to *L*157,356. in 1808.

This augmentation of *L*88,356. in the annual charges, originated chiefly, in a new and very extraordinary system, which had gradually crept in, of feeding the population from the Company's stores. The cause of those additional expences being ascertained, it was easy to apply proper remedies; but in doing so, I certainly could not expect to gain the good will of the St. Helenians: this will explain the "general dissatisfaction" alluded to.

It may be proper in this place to observe, that the effect of the measures introduced since 1808, has been to reduce the expences from *L*157,356. per annum, to *L*104,880. in 1812—thus, producing a saving to the Honourable East India Company of *L*52,476. per annum. This observation will be illustrated by the following Statement which was laid before the Honourable East India Directors, in April, 1814.

Comparative View of St. Helena Charges, 1808—1812.

		Total Charge 1808.	Total Charge 1812.	Difference, or Saving
		L.	*L.*	*L.*
Charges not included in the Island Accounts.	Net Charges, per Island Accounts,	114,961	91,743	23,218
	Deviation, in lieu of freight, to store-ships from England, - -	5,000	3,000	2,000
	Freight from India and China, at *L*30. per ton. - - - -	31,290	7,560	23,730
	Loss upon arrack leagers, -	951	- -	951
	Loss upon beef, pork, and flour casks,	5,154	2,577	2,577
	Total	157,356	104,880	52,476

This saving of *L*52,476. in the annual charges, was the effect of regulations and restrictions upon the issues and sale of provisions from the Company's stores; and of introducing the plough, and giving examples of English husbandry, which have led to a larger scale of cultivation.

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I found a garrison, as well as many of the inhabitants, immersed in the grossest intemperance, from the facility of obtaining, and their excessive use of, spirituous liquors; and I found that abuses obtained in some of the departments. The measures I resorted to, in correcting so many existing evils, (and which have been honoured by your entire approbation), must be in the recollection of your Honourable Court.

Whilst I was carrying forward my official duties, upon principles of strict justice between the Company and individuals, I was often assailed with reports of intended mutinies. These were sometimes conveyed in anonymous papers, and circulated, no doubt, with a view of intimidating me from persevering in a system of reform, which had become necessary, and which I was firmly resolved to pursue. Although these vile means, and some other circumstances, evinced a general dissatisfaction, yet, conscious of the uprightness of my conduct, I totally disregarded them, and those factious and discontented men, who took the lead in these despicable and seditious attempts, finding that their mean and unbecoming artifice had not the desired effect, were apparently lulled for many months past. Very lately, however, when a temporary inconvenience was felt, arising from our reduced stock of flour, and the total want of rice in the public stores, this occasion was eagerly laid hold of, and became a plea for the revival of unreasonable demands, accompanied with menaces of mutiny and rebellion.

The want of bread corn was the *prètended* cause of dissatisfaction: but circumstances have since clearly shewn that the *sole* object of the late violent measures, was to compel this government to give spirits to the garrison; an object in which every drunkard on the island felt a deep and warm interest.

The first symptoms of discontent appeared on Sunday morning

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the 22d of December: the particulars will be found in the following General Orders;

James's Town, 23d December, 1811.

GENERAL ORDERS.

"On Friday last, when it was reported to the Governor that no supplies of potatoes had been sent to market, and that considerable inconvenience was, in consequence, felt by the soldiers in garrison, he instantly adopted the only measure which was practicable for removing that inconvenience. Accordingly, a Proclamation * was issued, which, he has no doubt, will secure supplies of that necessary article of food, in sufficient quantity to meet the imports of flour and rice that are hourly expected.

"The Governor's consideration for the comforts of the soldiers, was again manifested, by the orders that were immediately issued, for a Court of Inquiry to assemble, for the purpose of investigating the real and true causes of the inconvenience complained of. On Saturday evening he was furnished with the proceedings of the Court; by which he plainly perceived, that for want of potatoes having been sent to market, and a *premeditated* design to make complaints, a temporary inconvenience was created. Nevertheless, he felt every inclination to remove it; for, when it was reported on Sunday morning, that there was no bread in the messes, he immediately ordered twenty bushels of potatoes from Plantation-house farm to be sent to James's Town.

"The Governor naturally hoped that such dispositions, to relieve as much as lay in his power, under present circumstances, the wants of the soldiers, would have been received as testimonies of his solicitude to promote their comforts. But how different was the reception! Some of the men made purchases in the

* Appendix, A.

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market, at the accustomed price of potatoes sent from Long Wood (and they of course, must have considered them reasonable); but soon after those purchasers returned the potatoes, and said they were *too dear*, in which the whole garrison seemed to combine. This was, indeed, the first complaint that occurred against the late reduced price of potatoes. If the soldiers will but look back to the difficulty they formerly experienced, and to the exorbitant rates that were extorted from them in procuring that excellent substitute for bread (so eagerly sought after, three years ago,) and compare the immense quantities that have been furnished them from Long Wood, during the last two years, they must be sensible they have derived peculiar advantages from the late enlarged scale of cultivation. Those advantages are, at least, equivalent to former indulgences, which it is, at present, impossible to grant, of purchasing rice and peas from the Company's stores.

"In all countries, and in all situations, temporary inconveniences of this kind will occasionally arise; and which no human foresight can prevent. Disappointments in the arrival of flour from England and America, and of rice from India, and other causes, have, unavoidably, occasioned a difference in the supplies to the garrison. But, in the year 1795, when the corn crops in England had failed, what was the state of the United Kingdoms? The very first families there were glad, and *contented*, to use the only substitute for bread corn that was procurable, and this substitute was potatoes. Are soldiers then, of all men in the world, whose profession often leads them to the severest privations and hardships, to depart from their character, by murmuring and complaining, merely because they cannot get *an indulgence* they were accustomed to; and at a time too when there is no *real* want of food, and when they receive their full rations of bread and meat?—Ought they not rather to prove themselves worthy of

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the name of soldiers; and to shew they are capable, (and willing too,) of sustaining such privations as it may one day be their lot to suffer? For shame! What a striking contrast to the conduct of this stationary garrison, is that of those brave fellows who are at present gallantly fighting in Spain and Portugal! No murmurs are heard of there, although the armies are exposed to the rigour of the seasons, to many privations, and to long and harrassing marches.

"The Governor is disposed to believe that this spirit of discontent, which was so strongly, and most improperly, manifested from Friday morning to Sunday evening, could not have been produced otherwise than by some few malicious persons, who have been but too successful in misleading others. This, indeed, may be justly inferred from some of the men having actually made purchases of potatoes, and afterwards returned them; evidently because those advisers had persuaded them *not* to take them at the former price, of which there never before was the smallest complaint.—This led to an inconsiderate declaration that they *must* have the potatoes lowered to four shillings. What could reasonably be expected from such conduct? Could any set of men for a moment persuade themselves that *this* was a mode of obtaining their ends? Weak, indeed, must that man be who would yield to such combination.—If he did, he would need to hide his face, and despise himself for ever.

"Although the Governor has deemed it proper, on this occasion, to declare these as his most decided and unalterable sentiments; yet he must, at the same time, assure every person on this island, that he never has been, nor ever will be, inclined to commit a single act of oppression towards any individual. He will do the strictest justice to all. He will act most fairly and uprightly between them and his honourable employers; he will pay the

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utmost attention to every fair and reasonable representation of the soldiers through the medium of their officers; and will be ready at all times to extend any necessary indulgence, as far as may be consistent with the established regulations, or compatible with his duty; but it must not be expected that he will ever depart from these principles; and of which no reasonable man can complain.

"With this view, he will issue immediate orders for assembling a special court of inquiry, in order to ascertain on what plea or pretext, the murmurs that began on Friday morning were occasioned; and he will afterwards adopt such measures as he may deem proper.

"The soldiers in this garrison should also be reminded that similar inconvenience to the present (if it may be so called) has not been unfrequent. In the year 1747 so great was the distress for flour, rice, and meat on this island, that the rations were limited to *half a pound* of meat per day, and to *five pounds* of bread per week. In 1797, for similar reasons, the weekly rations were regulated at three pounds of bread, at two-pence per pound, and at eight pounds of potatoes, at a penny a pound. These facts appear on the records; but at those periods, even although the rations *were* reduced, no murmuring or dissatisfaction shewed itself; all descriptions of persons submitted to the existing circumstances, because they were unavoidable.

"It gives the Governor sincere concern to be compelled to draw these comparisons, yet he trusts the future conduct of the soldiers (which he will do them the justice to say for these two years past, would have reflected credit on any garrison), may hereafter convince him, that the errors into which they have fallen, have only proceeded from the causes he has conjectured."

C. R. G. HODSON,
Town Major.

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When I delivered these orders to the Town Major to be issued, I opened a sealed anonymous paper which during the night was slipped under Mr. Doveton's door. I was, at the same time, informed by the Town Major that the regiment was prepared to mutiny, for the purpose of seizing my person, and sending me on board the Camperdown !*

The following is a copy of the anonymous paper alluded to; which was addressed " To the Governor and Council."

James's Fort, Decemr 22d, 1811.

" GENTLEMEN OF THE COUNCEL,

" His it still your intension to percevere in your oppression and " tyrannney to wards the troops in this garrison, has hitherto " you have done; if so, you can expect nothing but an open " rebellion.

" I am hereby autherized, by the troops of this island, to in- " form this Councel, if they do not immeadatly soply this garrison " with liquor and provisions, in the same manner has Governor " Brooks did (whose regulations you have voilated) you shall be " made answerable for what may follow, except you make your " escape good from this settlement.

" It is in your power to prevent the impending vengeance " which now hangs over your head's, and save the lives of many " poor souls, which will inevitable fall a sacrefice."

This seditious paper was written in a feigned hand. The affectations of false orthography, and of bad style, are evidently intended to conceal its author.

The receipt of this letter, and the Town Major's information,

* The Camperdown cutter was hired by the Company, and attached to the island in 1808. She was occasionally sent to the Cape of Good Hope, and South America, on the public service.

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determined me not to lose a moment in preparing for the worst that could happen. I ordered the Camperdown to sail immediately; the strong forts of Ladder Hill and High Knoll to be re-inforced; and I made the necessary arrangements for taking post at Plantation-house, which I resolved to defend in person against any attacks that might be made upon me.

To Captain Benjamin Hodson, of the artillery, an excellent officer, in whose judgment and discretion I had the most perfect confidence, I directed the Town Major to address the following instructions.

To Captain Benjamin Hodson, of the Artillery Corps.

SIR,

I AM directed by the Governor to inform you that you are immediately to take charge of the post at Ladder Hill; and to use your utmost vigilance in preventing any persons having communication with the men under your command; and if you should perceive any assemblies of men in garrison, or any appearance of commotion among the troops, you will apprise them if they do not immediately disperse and return peaceably to their quarters, that you will instantly open a fire upon them; and which you are hereby ordered to do, in case of a non-compliance with the notice you shall have previously given.

You will keep up a constant communication with the commanding officer in garrison, who will be enabled to give you information of what may be going on in the fort; and of which you will make a signal to Plantation-house.

Upon the smallest appearance of tumult, you will immediately fire the general alarm; the volunteers will then assemble at their usual station; and with whom the Governor will proceed to reinforce your post, or act according to circumstances.

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The officers who are to act under your command, are,

Lieutenant and Adjutant Wilson.
Lieutenant Dentaaffe.

I am, Sir, your obedient Servant,

C. R. G. HODSON,
Town Major.

James's Fort, 23d December, 1811.

To Lieutenant Phillips, of the artillery, who has long been in the command of High Knoll, and in whom I also had an entire confidence, I sent the following instructions.

To Lieutenant George L. Phillips, Commanding High Knoll.

SIR,

You are hereby ordered and directed to be particularly attentive both during the day and night, in watching the motions of men, or parties of men, passing or re-passing in the vicinity of your post; or upon the Side Path; or upon the old road leading from James's Valley to Half-tree-hollow.

If any party or parties of troops with arms, should pass in sight of High Knoll, and which you have good reason to believe are disaffected, you will open a cannonade upon them, and disperse them. And upon the first appearance of such parties, you will instantly fire the general alarm.

Twenty select artillery men will reinforce your post this evening.

I am, Sir, your obedient Servant,

C. R. G. HODSON,
Town Major.

James's Fort, 23d December, 1811.

After issuing these orders, I left the Castle, at four o'clock in the afternoon; but, contrary to my usual custom of returning

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home by what is called the Governor's Path, I thought it proper to shew, to such as might be watchful, that the violent anonymous letter, the writing on the church, "*A hot dinner and a bloody supper,*" and that on the castle gate, "*This house to let on Christmas-day;*" the one alluding to the festival dinner, and the other to my vacating the Castle by being sent off the island, had produced no apprehension in my mind. I therefore desired my horses to be brought to the Castle gate, where I mounted, passed slowly in front of the main guard, who were supposed to be concerned in the intended mutiny, and proceeded gently through the town, stopping occasionally, and conversing with several persons I met. It seems that one of the most forward in the mutiny (Berwick, who has since been hanged) passed close to me. I did not observe him, but he was seen from a window, after I had proceeded a few yards beyond him, to turn round, and, in the most contemptuous manner, by his gestures, and the action of his clenched fist and arm, fully to express his desperate intentions. This information did not reach me until after he was hanged.

About five o'clock in the evening, I arrived at Plantation-house. I sent for Mr. Ford, the head overseer, to enquire regarding the characters and disposition of the artillery and infantry stationed there as a working party. He assured me they were all good men, and that I might depend on them. Lieutenant David Pritchard, whom I had selected to take charge of this guard, soon after arrived. I desired him to inspect their arms, and to get the men immediately accoutred. I had previously ordered supplies of musket and rifle ammunition to be sent, which arrived before sun-set.

The men of the guard, consisting of 32, were then ordered into Plantation-house; and as Captain Benjamin Hodson had

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been instructed to fire a general alarm, upon the first appearance of commotion, (which would soon bring the volunteers to my post) I was certain, therefore, of being re-inforced long before the mutineers could reach me: and, under these circumstances, I had no doubt as to the issue, being firmly determined not to yield a single point, nor to suffer my person to fall into their hands.

According to information I have since received, the mutiny was not to have broken out until the morning of the 25th. It had been settled by the mutineers, that when the troops paraded for relieving the guards, that the whole of the regiment, joined by the main guard on duty, after seizing their officers, should march to Plantation-house and seize me: but, providentially, the measures I had adopted, made a change in their plan: and the ring-leaders seeing I was preparing, considered that no time should be lost, and therefore they commenced their operations within five hours after I had left the castle.

At half-past seven o'clock in the evening, I received a report, that the mutinous troops intended to proceed to Long Wood, for the purpose of getting possession of some field-pieces and ammunition. Upon hearing this, although I did not know how far it might be depended on, I sent an express to the Lieutenant-Governor; in which I suggested the advance of some field-pieces to oppose the mutineers, if they should move in that direction. The Lieutenant-Governor lost no time in taking up an advantageous position with the field-pieces, manned by the guard at Long Wood; but, at the moment the advanced gun was loading, the mutineers surrounded him and his party, and took them prisoners.

The particulars of their trausactions at Long Wood, and after they had seized Colonel Broughton, will be seen in his narrative.*

* Appendix, B.

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It was three-quarters past nine at night, when the general alarm fired. By this time, some of the volunteer riflemen, and volunteer artillery, to whom secret orders had been sent, had arrived; and by midnight, the Plantation-house contained a garrison of 130 men, which I considered sufficient to repel the most formidable attacks of mutinous troops. On the ground-floor, every window and door was guarded by three or four armed men. parties of rifle volunteers lay behind the parapet of the roof; and the rooms on the upper floor, were prepared to have been occupied at the instant the mutineers approached. Mrs. Beatson and my children were placed in security against musketry, in one of the upper rooms. It had strongly been recommended to me to remove them from the Plantation-house: but I foresaw, if this were discovered by the mutineers, it might perplex me: and as I felt the strength of my position, my mind was perfectly at ease, although it might not have been so if they had been removed from my own immediate protection.

After the alarm fired, a judicious movement was made from James's Town, of parties of artillery and infantry to reinforce me; the former under the command of Major Kinnaird, and the latter under Captain Sampson, two excellent officers, who had both been extremely active in bringing back a number of the soldiers to a sense of duty. Captain Sampson halted at Red Hill, about a mile from Plantation-house; and Major Kinnaird, about twelve at night, had passed Plantation-house, and took up commanding positions, in advance, with field-pieces, and Captain Barnes's company, and some other artillerymen, upon the roads on which the mutineers must pass, in coming from Long Wood. Captain Desfountain, with three guns and the volunteer artillery, occupied another position in the rear of Major Kinnaird.

Although Captain Sampson had expressed a confidence in his

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men, yet I could not but entertain the strongest suspicions of the whole of the infantry.* I therefore gave positive orders, that if any troops advanced near my post, without permission, they should be fired upon.

About one in the morning of the 24th, as no firing had been heard in the direction of Long Wood, I began to entertain apprehensions for the safety of the Lieutenant-Governor; and about the same time two lights and a number of men were discerned, moving slowly along the side of a hill, two miles east from Plantation-house; which were supposed to be the mutineers advancing with cannon. Major Doveton, commandant of the volunteers, immediately dispatched two active men of his corps to gain intelligence. Messrs. John Bagley and Kennedy were selected for that purpose; but very soon after, a black messenger brought intelligence that Colonel Broughton and his party were taken prisoners.

This information gave me at first some uneasiness, on account of the danger to which my friend and colleague would be exposed in the intended attack upon the mutinous troops: but there was no alternative; for however much I value the life of Colonel Broughton, I could not permit considerations of a private nature to interfere with my public duties; nor to deter me from carrying into execution the plans I had formed, which were imperiously

* These suspicions were not indeed without just cause; for, *Archibald Nimmo*, who had been one of the most daring and active in seducing the soldiers, and in administering the oath, and obligation, *to seize the Governor, and send him off the island*, had the audacity to range himself among *the friends of the Governor*, who came to reinforce Plantation-house. He had hoped by his influence to have turned those friends into foes; and seemed, at one time, when the Long Wood mutineers approached, to be on the eve of making the attempt: but perceiving he was suspected, and closely watched, by a non-commissioned officer, with a drawn sword, immediately behind him, he was thus deterred from putting his design in execution.

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necessary for restoring military subordination, and the peace and order of this settlement.

At the same time I considered it proper to make an attempt to rescue his person from the impending danger. I therefore wrote a pencil note to Captain Sampson, directing him to advance with 30 chosen men to form an ambuscade on the left flank of the mutinous column, and to commence the attack, by giving one fire in such a manner as to avoid Colonel Broughton, (who might be distinctly seen by the lights the mutineers had imprudently with them,) and immediately after to rush upon them with the bayonet. Major Kinnaird was to support this attack.

I had just given these orders when Major Wright arrived, and informed me the mutineers had halted within 50 or 60 yards of Major Kinnaird's post; and had sent forward to offer the conditions on which they would surrender. The negociations were intentionally protracted until day-light on the 24th; which having terminated in the unconditional surrender of the whole party, the attempt to rescue Colonel Broughton became unnecessary.

The first proposals sent by the mutineers, were, "that grievances must be redresssd, and a promise given, that the soldiers should have regular issues of spirits from the stores;" to which I sent word by Major Wright, "that I would grant no terms; I could not treat with rebels; and if they did not instantly surrender, I would put every man to the sword."

Major Wright soon after returned and told me the mutineers hoped I would grant terms: and it was observed by some persons around me, that the life of Colonel Broughton would be in great danger if the attack were made. To this observation I replied, that the mutineers having possession of the Lieutenant-Governor would be no security to themselves; and a second message was returned, apprising them of this resolution; and

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that I would instantly order them to be fired upon, and the whole destroyed if they did not submit. Upon receiving this reply, they began to waver; and finally they proposed to Majors Wright and Hodson, that all they would now ask, was my promise of pardon: but this I positively refused; and, at the same time, informed them, if they did not yield unconditionally, that Major Kinnaird had received orders to put the whole of them to death. It was now day-light, and seeing a superior force opposed to them, they at length surrendered, saying they would trust to my mercy.

Of above two hundred men that sallied from James's Town, upon this mad and desperate enterprise, only 75 remained together in the morning; all the others seem to have repented, and returned to their barracks.

The prisoners were put in close confinement at High Knoll, and the following General Orders were issued.

Head Quarters, St. Helena, 24th December, 1811.

GENERAL ORDERS.

"The Governor had hoped that the communication of his sentiments in the orders of yesterday, would have had the effect of convincing the soldiers in garrison of his dispositions to render them the strictest justice on every occasion; and of his readiness to afford redress for any real grievances they may sustain. He could hardly have supposed that so numerous a body of the corps of infantry, exceeding 200 men, could have been so misled by a few discontented and factious persons, as to commit acts of mutiny and rebellion in the manner they have done, by the seizure of the Lieutenant-Governor, and by avowing an intention of also seizing the person of the Governor himself. From the conversations Lieute-

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nant-Colonel Broughton had with these deluded men, it evidently appears there has been too much pains taken, by some villains in this island, to misrepresent, or construe, every act of the Governor, as tyrannical and oppressive. On the contrary, he will venture to say, that no former governor had ever been so attentive to the comforts, as well as to the improvement, of the moral character of the garrison. He has never ceased to do his utmost to augment the produce of the lands, by which alone can the necessaries of life be reduced in price, and thereby come within the reach of a soldier's pay. It is true the issues of spirits have been discontinued; and this is by order of the Court of Directors. It is his duty to obey; and what the soldiers did demand, it is impossible to give. The garrison may recollect the shameful excesses that were committed lately, after the arrival of 12 casks of rum from the Cape, and the great increase of patients in the hospital, which immediately followed; notwithstanding the soldiers were limited to half-daily rations of spirits. It was for these reasons that the Governor *did* recommend to Mr. Pringle, at the Cape, not to send the remaining casks; but, at the same time, he requested him to send Cape wine, which is hourly expected; in order to give a trial and to ascertain if this substitute for spirits would be acceptable: if so, it would be provided in sufficient quantity to afford regular issues, at the rate of one pint per day to each man. It is also well known, when any soldier's term of service is expired, that the Governor has never, in any instance, refused his discharge. Wherefore, if any are dissatisfied with the changes that have taken place on this establishment, they have it always in their power to quit it, when their term of service shall have been expired. Nay, the Governor will even go further; for if there be any effective men here who dislike their situations, because they have not an opportunity of committing excessive intemperance,

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he will readily accommodate them, by entertaining them and making up the term of five years, for any of the India establishments, where they will have opportunities of satisfying their propensities.

"It came to the knowledge of the Governor last night, that the infantry complain of some hardships in the nature and amount of stoppages. The circumstances that have been represented to the Lieutenant Governor, as well as some particulars in a written statement in his possession, are matters that will be immediately attended to. In short every soldier may rest assured, that if *real* grievances are properly represented, there shall never be cause to complain of want of redress—but at the same time the Governor must apprise the soldiers, that no menaces, no intimidating anonymous papers, like those that have been recently handed about, can ever produce a change in his conduct. He will do his duty: but will never permit a stain on his reputation and character, by yielding to mutinous clamour and unreasonable demands.

C. R. G. HODSON.
Town Major.

The discomfiture of these rebels had not subdued the mutinous spirit of their associates; and it having been reported that an attempt would be made to rescue the prisoners; I sent instructions to Colonel Smith to occupy two strong positions which commanded, with cannon, the barracks, and the roads leading to the interior.—At the same time were issued further orders to the troops.

INSTRUCTIONS.

To Lieutenant Colonel Smith; or Officer commanding James's Town.

SIR,

"I AM directed by the Governor to inform you that Captain Benjamin Hodson has been instructed to advance from his post

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at Ladder Hill, two guns to the first turning of the road; where they are to remain until further orders, ready loaded with grape, for the purpose of firing upon any assemblies or parties of troops that may attempt to quit the barracks.

Immediately upon receipt of this, you will give orders for occupying Saddle-hill battery with a captain of the Volunteer Corps, and the following detail:

20 Volunteer Infantry (Rifles),
20 ditto Artillery.

"You will direct him to load all the guns on that battery with grape; and to depress them towards the barracks and Side-path; and to open a fire upon any parties of troops that may be observed in the act of assembling or moving. In case, however, this fire should not have the effect of retaining the men in barracks, and that they may attempt to move along the Side-path, or any where within reach, the commanding officer of the Saddle battery is then to advance with the whole of his riflemen, and to hang upon, and harass, the flank of the troops in their march; taking care not to fire except from points *immediately above* the columns in motion; which will be a guide to the artillery at High Knoll, in the event of these operations taking place in the night. The officer commanding, has been instructed to cannonade the path in the direction he may observe the musketry upon the summit of the opposite ridge. You will further direct the officer in charge of Saddle battery to use every other means of obstructing movements of troops on the path; and which might readily be done by taking with him the Volunteer artillery men, for the purpose of rolling down stones, &c.

"If, nevertheless, the troops in motion should be able to advance, the captain of volunteers and his party are then to keep

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on their flank and to harass them in whatever direction they may proceed.

I am, Sir, your obedient Servant,

C. R. G. HODSON,
Town Major.

Plantation-house, 25th December, 1811.

25th December, 1811.

GENERAL ORDERS.

A considerable proportion of the St. Helena regiment having been guilty of mutiny and rebellion on the night of the 23d instant, by outrageously seizing the Lieutenant Governor, and avowing their desperate intention of attempting to seize the Governor: it is therefore the Governor's positive orders that the men keep in their barracks, and that the main guard shall not get under arms without the sanction of the commanding officer of Ladder Hill, who has been ordered to depress guns loaded with grape, and to fire upon the main guard if it shall presume to get under arms without his previous permission.

"Under the present state of affairs, the Governor deems it expedient to notify to the troops, that if any non-commissioned officer or soldier shall be guilty of disobedience to his officers, or shall evince by words or actions the smallest symptom of mutinous spirit, he will instantly be seized, tried by a Drum-head Court Martial, and hanged.

By Order of the Governor,

C. R. G. HODSON,
Town Major.

Orders were also issued on the 25th, for assembling immediately a General Court Martial. Nine of the ring-leaders were brought to trial, all of whom received sentence of death. But six

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only were excuted in the evening: and finding that even these awful, and necessary examples, had not produced the desired effect; and that the St. Helena infantry still intended to proceed in acts of mutiny and rebellion, by seizing their officers, in the expectation that this step would compel me to yield to their demands, or rather demand (for the *sole* object of the mutiny was to obtain issues of spirits); I deemed it expedient to undeceive them by issuing further orders.

Head Quarters, St. Helena, 26th December, 1811.

GENERAL ORDERS.

"At a General Court Martial assembled yesterday, the following prisoners were tried, upon a charge of mutiny, preferred against them by the Governor.

Charge.—"Henry Sisell, Thomas Berwick, Archibald Nimmo, "and Robert Anderson, privates, and Arthur Smith, Thomas "Edgeworth, Peter Wilsey, and John Seager, corporals in the "St. Helena regiment, and Richard Kitchen, gunner, in the "artillery, confined by order of the Governor, on a charge of "mutiny."

Sentence.—"The Court having deliberated on the evidence, "are of opinion that the prisoners are guilty of mutiny, the crime "they are charged with, in breach of the Articles of War, do "therefore sentence, that the prisoners Sisell, Berwick, Nimmo, "Anderson, Smith, Edgeworth, Wilsey, Seager, and Kitchen, "shall suffer death, in such manner and at such time and place "as the Governor and Commander in Chief shall direct."

"We, the Governor and Council, approve the sentences awarded "against the whole of the prisoners, and order the immediate "execution of Sisell, Berwick, Nimmo, Anderson, Smith, and

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" Edgeworth, who are to be hanged by the neck until they are " dead."

" The sentences upon the other prisoners, Wilsey, Seager, and " Kitchen, are remitted."

ALEX. BEATSON.
E. S. BROUGHTON.
W. W. DOVETON.
ROBERT LEECH.

" It was the intention of the Governor that the execution, yesterday evening, of these unhappy men, should have taken place in presence of the whole of the garrison, assembled upon the Side-path : but as the trials lasted much longer than was expected, and as the state of affairs required that immediate examples should be made, they were accordingly hanged at sun-set, at High Knoll. The Governor sincerely hopes that these awful examples will prove a salutary lesson and warning to those who may still be inclined to persevere in the atrocious crimes of mutiny and rebellion; and that they may effectually put a stop to that spirit of disaffection and combination which has, for some days past, infatuated a number of the soldiers of the St. Helena regiment.

" The Governor has been informed, there are reports prevalent of further attempts being in contemplation for the purpose of subverting authority, seizing his person, and releasing the prisoners, he therefore thinks it again necessary, to apprize those who may entertain such illusive hopes, that any attempt will infallibly prove equally abortive, as that which was made on the night between the 23d and 24th instant; for whilst he is supported in the manner he has happily been, during the late conflict, it will be totally impossible to make any impression on the post he has occupied; and in regard to such hopes as were entertained by the

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mutineers, at the time they had possession of the Lieutenant Governor's person, he trusts, he has already evinced the most fixed determination, that no feelings or considerations of a private nature shall ever deter him from discharging his public duty in that manner which his King and Country expect from him. Wherefore, if any farther attempt should be made, he shall, most assuredly, carry into effect the same orders as he sent to Major Kinnaird on the morning of the 24th; which were, to advance upon the insurgents, and put the whole to the sword: and which, undoubtedly, would have been their fate, if they had not surrendered at discretion.

C. R. G. HODSON,
Town Major.

As it was reported to me on the evening of the 26th, that murmurs and discontents, and a sullenness amongst the mutinous troops still continued (notwithstanding their violence was evidently abated, by the examples that had been made), I deemed it expedient, therefore to explain to them, the dangers to which they exposed themselves, the madness and folly of their proceedings, and the total impossibility of attaining their object, even if they were successful in securing my person; and which I would take care to prevent. These sentiments were conveyed in Evening General Orders.

EVENING GENERAL ORDERS.

26th December, 1811.

There is no soldier so ignorant of military law as not to know that the crime of mutiny, which strikes at the foundation of all military subordination, is the most flagrant offence that he can possibly commit; it is, therefore, punishable with instant death.

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But when to this greatest of military crimes are added acts of open rebellion against a state or government, the union of both constitutes an offence far more heinous than any that military law has singly provided for. The Governor, therefore, when, on the morning of the 24th, he compelled a body of rebels and mutineers, consisting of 75 men, to surrender at discretion, might have been fully justified if he had ordered the whole of them to be instantly hanged. But as he had received information that many had been seduced, or forced, by a few factious and incorrigible drunkards, he refrained from punishment, and so dreadful an effusion of human blood. Nine only of the ring leaders were selected and tried according to the forms prescribed by military law. The whole were found guilty; but still to manifest his disposition to mercy, only six were ordered for execution.

"It gave the Governor some degree of consolation, in the late unhappy state of affairs, and disorganization of the St. Helena infantry, to be informed, that these awful examples have been admitted as perfectly just and necessary. The unhappy sufferers declared, that he did no more than his duty, and that they deserved their fate. The dispositions manifested since those executions, being symptoms of returning obedience, he most earnestly hopes, that on duly reflecting upon the enormities that have been committed, even the disaffected of the regiment, which he believes to be few, will soon be brought to a sense of their errors.

"The Governor has also reason to hope that the measures he has adopted, must have by this time, convinced the minds of all concerned in the late dangerous proceedings, that any attempt to intimidate him to swerve from his public duties, or to seize his person, can never avail; and he thinks it proper on this occasion, again to apprize those factious and malicious persons who may yet remain, that, under such despicable leaders, in so bad a

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cause, he should feel, in the posts he has occupied, the fullest confidence and security.

"He trusts, therefore, that those leaders may perceive the folly and madness of their conduct; and that no soldier may henceforward be misled by them, or seduced to return to such unlawful, dangerous, and desperate acts, so that the peace and order of this small community may soon be permanently established; and the dreadful consequences that infallibly await the crimes of mutiny and rebellion may be averted.

The Governor will ask those deluded men what they could possibly expect, even from complete success?—Would the seizure of his person be of the smallest advantage?—Would his successor, whoever he might be, shrink from his duties?—Would he yield to the demands of the rebels?—Would he not carry into effect the orders and regulations of the Company?—Would the accomplishment of the avowed object of the late mutiny and rebellion secure the return of spirits to the island?—Undoubtedly not: for spirits have been its bane for more than a century; the primary cause of all the disorders and mutinies that have taken place; and therefore the reform that the Governor has felt it his duty to make, will undoubtedly be permanent. Yet if any persons continue dissatified, because they are now deprived of the means of destroying their health by excesses, and of corrupting the minds and morals of all around them, and of the younger men who may from time to time, be sent to this island, they shall have the Governor's free consent to change their situation, in the modes he has pointed out, in the orders of the 24th instant."

C. R. G. HODSON,
Town Major.

The General Court Martial which sat on the 25th, re-assembled

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on the 26th, for the trial of three other ringleaders, who were all capitally convicted. Hewit alone was ordered for execution; and the sentences of the other two were remitted. This execution was conducted with great solemnity. The whole of the garrison were drawn up on the lower parade; the prisoners led along the front; the dead march was played; and immediately after the prisoner Hewit was turned off, the Town Major read to the troops these orders.

GENERAL ORDERS, by the GOVERNOR and COUNCIL.

27th December, 1811.

Parole,—PEACE.

"The Governor and Council most earnestly hope, that the necessary and awful examples which they have been compelled to make, from the madness and folly of a few malicious persons, who had artfully misled, or forced, a great number of the St. Helena regiment to join in acts of open mutiny and rebellion, will be sufficient to produce the happy effect of restoring military subordination, and the peace and tranquillity of the island.

"The Governor and Council will soon take into consideration, the expediency of granting an amnesty to the remainder of the prisoners; and will also adopt such measures as may tend to redress the grievances of which the mutineers complained to the Lieutenant-Governor, whilst he was their prisoner; and which complaint, until the morning of the 24th instant, had never before reached the ears of either the Governor or Lieutenant-Governor, otherwise they would undoubtedly have long since been attended to: but at the same time it must be distinctly understood, that the existence of grievances, even of the greatest magnitude, could never justify such daring, unlawful, and desperate proceedings

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as those to which too many misguided men had resorted, on the evening of the 23d instant.

By order of the Governor and Council,

T. H. BROOKE,
Secretary.

This awful scene made a strong impression; the mutinous spirit was humbled; and subordination from that moment was effectually restored.

In order, however, to prevent a return of such disgraceful proceedings, I gave orders to seize and confine every man who had been active and forward in the late mutiny. Between 20 and 30 have been put in close confinement, whom it is my intention to send off the island by the first favourable opportunity. On the 30th of December, I granted an amnesty to the remainder of the prisoners who were taken in arms. They were paraded at Plantation-house; and after admonishing them upon their recent conduct, desiring them to behave in future like good soldiers, and telling them that I freely forgave them, although they had taken up arms against me, I ordered them to return to their duty.

On this occasion, after the order of peace, I deemed it proper to issue general orders.

Head Quarters, 30th December, 1811,

GENERAL ORDERS.

The Governor having ascertained that many of the soldiers of the St. Helena infantry, who were taken in arms against him, on the 24th instant, had either been misled by some factious and discontented persons, or forced by a few desperate villains, to engage in the atrocious crimes of mutiny and rebellion, he is therefore pleased, in consideration of these circumstances, to grant an

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amnesty to the remainder of all those who were compelled to surrender, with the exception of those only who have been notoriously active and violent. These he has ordered into close confinement, until a favourable opportunity offers of sending them off the island, because, if such characters were permitted to remain, they might again endanger its tranquillity.

The Governor trusts that the instances of clemency which he has manifested towards the mutinous troops, on the late unhappy occasion, and the explanations he has gone into, in the several orders he has issued, will prove his dispositions to mercy, and his readiness to do justice to all men: and that henceforward they may prevent the possibility of unfavourable impressions being made on the minds of the soldiers by such as may again attempt to mislead them.

C. R. G. HODSON,
Town Major.

On the evening of the 31st December, I had received all the reports of the commanding officers respecting the conduct of officers and men under them, from the commencement of the mutiny until it was subdued. I perused them with attention: and being satisfied that great exertions were made in the first instance; that the officers in garrison were watchful: and that to their continued efforts; to the fidelity and loyalty of the artillery and volunteers, and to all those who came to re-inforce Plantation-house to repel the mutinous troops, who were then advancing from Long Wood, may be ascribed the happy termination of the mutiny: I therefore issued the following orders:

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Head Quarters, St. Helena, Jan. 1st. 1812.

GENERAL ORDERS.

The Governor embraces the earliest moment that circumstances have permitted of expressing to the officers of this garrison, the high sense he entertains of their meritorious and active exertions on the night of the 23d of December, when the licentious spirit of a great portion of the St. Helena infantry was so strongly manifested; and which, a short time afterwards, suddenly burst forth into open acts of mutiny and rebellion.

Although the utmost efforts of the officers were insufficient to restrain the outrageous conduct of the soldiers within the town; yet to their continued efforts, to their zeal in the cause of government, and their respect for its authority, are justly to be ascribed the surrender of the mutineers, the return of military subordination, and the maintenance and preservation of the constituted authorities of the island.

The Governor, therefore, feels much satisfaction and pleasure, in thus publicly expressing to the officers of St. Helena, his warmest approbation of their conduct: and he requests they will accept his best acknowledgments and thanks for the signal and important services they have rendered.

The uniformly steady conduct of the corps of artillery, who, almost to a man, escaped the contagion that spread around them, deserves the highest praise. Their unshaken fidelity in every post they occupied, and the assistance they gave in restoring the peace and order of this settlement, will best be seen by the reports of their officers. These reports shall be speedily promulgated, in order that it may be known how well the artillery corps of St·

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Helena has maintained the character of good and faithful soldiers, against a cause that threatened this Government, as well as the Governor's person, with imminent danger.

To all the non-commissioned officers and privates of this excellent corps, therefore, the Governor requests that these his sentiments may be conveyed by Lieutenant-Colonel Smith, together with his warmest thanks for the essential aid he derived from their loyalty and zeal.

The late occasion is the first that has occurred, by which a judgment could be formed of the establishment of St. Helena volunteers. It has fully demonstrated how useful and necessary is such an institution. Their loyalty is the support of public authority: their alacrity in re-inforcing the Governor; their determined spirit to stand by him to the last extremity; their eagerness to do their duty, and to guard his person and family, for several nights after he himself considered the danger as past, will ever be remembered by him with sentiments of the warmest gratitude. He requests therefore, that these his sentiments and his best thanks may be conveyed to all the officers, non-commissioned officers and privates of the St. Helena volunteers, by their worthy commandant and leader, Major Doveton.

The guard at Plantation-house, commanded by Lieutenant David Pritchard, (consisting of 32 artillery and infantry,) having been immediately under the Governor's observation, he feels their full claim to particular notice; and accordingly requests, that Lieutenant Pritchard and the non-commissioned officers and privates of that guard, will accept his best thanks.

Where all the officers are entitled to praise, it is scarcely necessary to discriminate; but the zeal and unceasing attention displayed by Major David Kinnaird, throughout the whole of his arduous and various duties, during the late transactions, (as well

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before as after they began,) have been so truly conspicuous, that no one can refuse him that tribute of praise, and particular notice, to which he is so justly entitled. To Major Kinnaird therefore, to Lieutenant-Colonel Smith, Major Wright, Captain Sampson, and Captain Henry Pritchard, and Lieutenant Hunter, and to all those officers who exerted themselves among the mutineers, to persuade them to return to their duty; as well as to Captain Benjamin Hodson, commanding the important post of Ladder Hill, and to Lieutenant Phillips in the command of High Knoll, the Governor feels particularly indebted, for their spirited exertions, and for the able manner in which they discharged their respective duties, from the commencement, until the happy termination of the late mutiny and rebellion.

The assistance he derived from Town Major Hodson, and Captain Henry Pritchard, his personal staff, and from Captain T. H. Brooke of the volunteers, entitles them to his warmest acknowledgments, and he thus publicly conveys to them his warmest thanks, with an assurance, that he will not fail more fully to point out their merits, as well as that of other officers, to the notice of the Honourable Court of Directors.

Captain Sampson is requested to communicate to the non-commissioned officers and privates of the infantry, who advanced under his command, to re-inforce Plantation-house; and Major Wright, to those of that corps, who acted on the late occasion, as good and faithful soldiers, the Governor's highest approbation of their conduct, and his sincere thanks.

The Governor trusts that Lieutenant-Colonel Broughton, and Major Doveton, will readily admit of his thus publicly expressing the high sense he entertains of their cordial co-operation in overcoming the dangers with which this island was threatened. Colonel Broughton's seizure might be considered as a providential

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interference: it gave him an opportunity of remonstrating with the mutineers, of knowing their sentiments, and of discovering how shamefully and fatally, those men have been misled by some wicked and designing villains. Although the Lieutenant-Governor was prevented opposing them in the first onset, yet this very circumstance proved fortunate, and the arguments he made use of whilst a prisoner, no doubt contributed to avert the effusion of blood; and ultimately led to the suppression of those daring and dangerous acts, and to the perfect re-establishment of military subordination, in the space of four days, without the loss of a single innocent life.

C. R. G. HODSON,
Town Major.

Such are the sentiments I entertain of those officers and men who were officially employed in suppressing the mutiny. But there are still some others, whose merits and important services I could not properly introduce in military orders, and which I am not less bound in duty than in gratitude to bring to the particular notice of your Honourable Court. These are some valuable friends (Doctor Baildon, Messrs. Jones, Brabazon, Balcombe, and Hollis), who voluntarily came forward to support me in the hour of danger: and on whose zeal for the public service, as well as personal attachment, I had the most perfect reliance.

Doctor Baildon had been on duty in the fort: and had opportunities, some days before the mutiny broke out, of hearing what was going forward. He had, indeed, reason to imagine the danger to which my person was exposed, was greater than I apprehended, for I declined Captain Pritchard's offer to accompany me, and left the fort, on the evening of the mutiny, unarmed, and attended singly by my groom: but the Doctor, suspecting

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some of those desperate mutineers might attempt my life, armed, himself (although, for some days, he had been extremely ill), and, unknown to me, followed; keeping at some distance, and carefully watching if any persons approached me. Nothing, however, occurred; and he arrived at Plantation-house about sun-set, on the 23d of December.

From this moment, until the termination of the mutiny, he was constantly with me, employed in aiding in preparations for defence, in communicating my orders, in collecting information, and, in short, in discharging, in the most able manner, all the duties of a zealous friend, and an active staff-officer. For such distinguished services I feel great pleasure in thus recording my best acknowledgments and thanks; and whilst I discharge this public duty, it is due to Doctor Baildon, that I should recommend him, in the strongest manner to the favour and notice of your Honourable Court.

The Rev. Samuel Jones, Mr. Brabazon, Mr. Balcombe, and Mr. Hollis, have also rendered essential service; for as my person was the object of the mutineers, and suspecting, as I have before stated, even some of those who came to assist me, I deemed it prudent not to run the hazard of seizure, by placing myself between suspected troops and the mutineers, who were advancing: nor to trust the communication of orders excepting to confidential persons. These gentlemen eagerly and anxiously assisted in conveying, in the most punctual manner, the orders I had occasion to give on the night of the 23d: and were also, from that time, a strong acquisition to my guard, during the whole period of the mutiny; being well armed, and always ready to support me to the last extremity. They have accordingly re-established their claims to my public acknowledgments and thanks, as well as to the favourable consideration of your

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Honourable Court, for their distinguished loyalty and zeal in the cause of this government.

I have the honour to be, with great respect,

HONORABLE SIRS,

your most faithful and obedient humble Servant,

ALEX. BEATSON.

St. Helena, January 4th, 1812.

Extract from Colonel Beatson's second Letter to the Honourable the Court of Directors, upon the Subject of the Mutiny.

" *St. Helena, 14th January*, 1812.

" *Par.* 1. ON the first instant, I had the honour of forwarding by H. M. Sloop Acteon, a Narrative of Proceedings from the commencement of the late mutiny until the surrender of the mutineers on the morning of the 24th ult. I was prevented at that time from saying more, as the Acteon was under orders not to anchor at St. Helena, and had lain to for only a few hours; but after I had sent off my letters, Captain Cator, hearing of the late occurrences, obligingly came to Plantation-house, and I had thus an opportunity of adding to my dispatch a copy of the General Orders of the 1st of January, by which your Honourable Court would have the gratification of observing that I have been completely successful in restoring military subordination and the tranquillity of the island.

" *Par.* 2. I have now the honour to forward a detailed account of every circumstance connected with the late mutiny. This document, dated the 4th instant, I deemed proper to have printed; for the purpose of counteracting misrepresentations from discontented persons who would gladly obstruct, by every means in

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their power, all sorts of improvement and reforms; and would be happy to see the old system revived of feeding themselves and the inhabitants from the Company's stores; as well as the return of spirits to the island.

"*Par.* 4. Your Honourable Court will perceive that the measures I pursued, during the late mutinous combination, were calculated to give time to reason with the troops upon the impropriety of their conduct; by which I did not despair of bringing them back to a sense of duty; for, by occupying Plantation-house with a small but select number of men, I was prepared to give a severe check at the first onset, and to repel the most formidable attack that a mutinous body could make. Indeed when I took up that position, I knew not but the combination was general, of which I had but too much reason to suspect from the conduct of the *whole* garrison: this will appear from the General Orders of the 23d December: nor was it until the execution of six of the ringleaders, on the 25th, which happily met with no obstruction, that the doubts entertained by myself and those around me, were in some measure removed.

"*Par.* 5. On that day I directed additional positions to be occupied, which commanded the barracks, and the roads leading to the country. The mutinous troops, in James's Town, were then so completely in my power, (when I found the artillery uncontaminated), that if they had been ten times more numerous they could not have forced their way to the interior, nor have committed any disturbance. The last execution took place on the 27th, under the cannon of Ladder Hill and of those other positions which kept the mutineers in awe, and restored them to a sense of duty; and from that moment, I am happy to say, the peace of this settlement was effectually re-established."

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APPENDIX.

A. *Proclamation, 20th December*, 1811.
B. *Lieutenant-Governor's Narrative.*
C. *Lieutenant-Colonel Smith's Report.*
D. *Major Wright's Report.*
E. *Major Kinnaird's Report.*
F. *Extract from Captain Benjamin's Hodson's Report.*
G. *Captain Sampson's Report.*
H. *Captain Braid's Report.*
I. *Captain Barnes's Report.*
K. *Lieutenant F. Seale's Report.*
L. *Lieutenant G. Phillips's Report.*
M. *Lieutenant William Seale's Report.*
N. *Lieutenant Thorn's Report.*
O. *Captain Pritchard's Report.*
P. *Lieutenant Hunter's Report.*
Q. *Lieutenants Phillips's and Thorn's Memoranda, relating to the behaviour of the Prisoners, during their Confinement.*

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A.

PROCLAMATION.

St. Helena, 20th December, 1811.

It having been reported to the Governor and Council, notwithstanding repeated proclamations regarding the produce of the farms being sent to market, that with only two exceptions, not a bushel of potatoes has yet been furnished, whilst the Company's farm at Long Wood has, since the beginning of November, supplied upwards of *one thousand seven hundred bushels* to the garrison and inhabitants; and it being expedient, on account of reserving seed for the ensuing crop, to discontinue the supplies from Long Wood; it is become absolutely necessary to resort to the same measure as was adopted in the year 1797, at a time similar to the present, when the stock of flour was nearly expended: and accordingly it is resolved, that the sale of potatoes to the shipping shall be restricted until further orders; insomuch, that an equal number of bushels only, as shall appear to have been sent to the public market, will be allowed for exportation.

As an encouragement to the planters, under present circumstances, to furnish the market with potatoes, the Governor and Council have resolved to allow the sale price of potatoes in the market to be *eight shillings* per bushel until further orders: and any person who shall be convicted of having demanded a higher price will be liable to such fine or punishment as shall be awarded by the Governor and Council.

By Order of the Governor and Council,

T. H. BROOKE,
Secretary.

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B. *Colonel Broughton's Narrative of the Conduct of the Mutineers,—23d and 24th December*, 1811.

HAVING been detained on duty in James's Town, until past 7 o'clock, I did not arrive at Long Wood till late; and reflecting on the disorderly state of the infantry regiment, which had shewn itself on that day, I had some suspicion that an attempt might be made to seize on the artillery at Dead Wood shed. As I passed by Hutt's gate, where Mr. Hall, the Conductor, resides, I acquainted him of my apprehension, and told him to go over to the shed and see that the guard was present, and to have the guns in readiness. I had not been at home three quarters of an hour, when I received a letter from the Governor, (¼ past 9 o'clock) informing me that it had just been reported to him, that the mutineers intended to seize the guns at Dead Wood; one party was to march directly from the fort, the other from Banks's. On the receipt of this intelligence, I immediately sent for Serjeant Lassels, the non-commissioned officer in charge of the artillery; and as he did not come so soon as I expected, I proceeded towards the shed and met him—inquired if he had heard of the disorderly conduct of the soldiers, and of their intention to seize the guns that night: he replied, 'that he had just come from the fort; and that I might depend on it, they would not come that night, —we might all go to bed in perfect safety: for he had heard, that they meant to make the attempt on Wednesday: and added, that when I sent for him, he was coming to acquaint me of their intention.' We soon got to the shed: it was then about half past 10 o'clock; raining and very dark. I found Mr. Hall there with the guard paraded, which consisted of 2 serjeants, and 12 or 14 artillerymen. I told them that I expected to be attacked by

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some mutineers; and hoped that they had no concern with them; and that they would do their duty in defending the guns, and stand by me: which they all assured me they would do, and that they had no concern whatever with the mutineers. The four outer guns I ordered to be got ready as soon as possible. The first two, as soon as equipped, were sent to Dead Wood, to cover the road leading up from Banks's, which I placed under the charge of Serjeant Tunstall, with 6 or 8 artillerymen, with orders to defend them to the last; and in case of being overpowered, to spike them, rather than suffer them to fall into the hands of the mutineers. Much time elapsed before the other two guns were got out and equipped; and I expressed my displeasure to the serjeant for the very great delay, and his not having the shot, portfires, &c. at hand: he seemed confused and muddled; continued to say it was unnecessary trouble, as he was certain no attempt would be made that night. As soon as the first gun was ready, the men from Long Wood, (working party) consisting, I think, of 2 matrosses, (one of them an unfit), and 3 privates of the infantry, joined; and I think fell in with this gun: we then proceeded to a spot within 50 yards of the telegraph; where the road is narrow, and nearly 100 yards in length were commanded. Here I placed this gun, and gave orders to load with grape: the gunner replied, that no ammunition had yet come. I ran back 50 yards, and met a man with it, and hurried to the gun; but when in the act of loading, the mutineers rushed upon us, and made me and the party prisoners: we had not time to spike the gun. Mr. Hall was in my rear about 20 yards, with a six-pounder, coming up to form on the road where I had placed the first gun; and seeing me a prisoner, he instantly spiked that gun, and ran back to the shed (about 200 yards), —spiked all the guns there, and afterwards went to Dead Wood,

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where the two first guns were posted—these he found in possession of the mutineers; but nevertheless contrived to spike them. By this fortunate circumstance, the mutineers got only one three-pounder.

On their obtaining possession of my person, they told me, 'they did not mean to do me, or any person the smallest injury: all they wanted was the Governor's person,—whom they would take, and send on board the Camperdown—that he should no longer be Governor of the island, as he was a tyrant—would not redress their grievances nor do them justice—that I must be their Governor, and must go along with them to Plantation-house.' I admonished them upon the impropriety of their conduct; and advised them to return, and behave as good soldiers;—that if they had any grievances, this was not the way to obtain redress;—they should complain through their officers; but if they persisted in such unlawful conduct, every man of them would be punished with death. The Governor, I said, had done no more than his duty in obeying the orders of the Court of Directors; and that even if they succeeded in getting possession of his person, (which was very improbable) whoever was placed in charge of the government, would act, just in the same manner as he had done: so that they would be as far from obtaining their ends as ever. I told them, their having me in their power, would be no security whatever to them; as my life was of no consideration when the safety of the government was in danger;—that the Governor was a good man,—the soldier's friend, and did justice to every man. Many of them then called out, 'No! No! we have often complained, but never could get redress.' I replied, that they had been misled by some villains; that none of their grievances had ever come to the Governor's knowledge; and asked them, what they had to complain of. Some called out 'that he meant to starve them,

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having neither written for flour, rice, nor spirits; that he brought chinamen and blacks to the island to eat up all the provisions; —that even for the Festival Dinner, he would not allow the purchase of spirits from the captain of the Camperdown, although it was proposed by Mr. Leech;—that they were put under heavy stoppages for their undress uniform, for nankeen, wings, leather stocks, tufts, &c. when they could have them for nothing from the Company's stores;—that after paying their mess, they had nothing left to purchase vegetables, or the smallest necessary.'

I told them, that they had been quite misinformed;—that both flour and rice were shortly expected; and as soon as it arrived, they would be allowed to purchase the usual quantity: but, from our stock of flour being low, it was found necessary to limit each person's allowance, so as to meet the arrival of the expected supplies:—this they were perfectly satisfied with;—that spirits were not sent for, was by order of the Court of Directors; but that the Governor had sent to the Cape, for wine; and that spirits had been procured for the Festival Dinner. As to the stoppages which had been made on account of dress, I said, it would be enquired into, and that the Governor had never been informed of it. Many exclaimed, 'we have been deceived, and are sorry we have gone so far—the Governor is a good man; but it is spirits we want; and had we spirits, less bread would do.' I continued to advise them to return to their duty, and behave themselves as obedient, good soldiers. This seemed to have some effect: and as they reached the shed, they asked me to write in their favour to Major Wright. I went into the serjeant's barrack, and while getting the pen and paper, some of the most violent called out, 'No letter! No longer delay! Bring him out! (meaning me) he must go with us to Plantation House!' They had now been upwards of an hour in getting the three-pounder gun equipped

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with ammunition, &c. &c. when they proceeded; and as I got to Long Wood gate, I asked them to wait until my horse came, as also two lanthorns with lights;—to which they did not object: and during our stay at the gate, I again addressed them, and pointed out the enormity of the crime they had committed—Mutiny and rebellion, I said, were punishable with death, and nothing could possibly save them; and if they would return to their barracks, and give up their advisers and leaders, I would recommend them to the Governor's clemency. 'No! No! they said, we must have spirits.' It was now about one o'clock, when the party consisting of about 120 men, and the three-pounder gun proceeded. I was placed in the centre, under the charge of Anderson, a private of the light company. Sisell, a private grenadier, appeared the most active, and the leader. Corporal Smith was violent, and threatened to take Mr. Hall's life, for spiking the guns, and not giving up the keys of the magazine. After passing Hutt's gate, and half way to the Alarm-house, I found an opportunity of telling one of the servants who carried a lanthorn, to make the best of his way to the Governor, and inform him of my situation, and the strength of the mutineers;—to give the lanthorn to one of my party, a prisoner with myself, and to go back as if returning to Long Wood. By this stratagem, he got clear off from the mutineers, and carried the first notice to the Governor. Two other men I afterwards sent, were made prisoners. The night was dark, and at times light rain, which caused much delay in getting on the gun. At one place it was overturned—this caused a halt of nearly half an hour;—and during that time, much confusion and quarelling took place amongst the mutineers, which gave an opportunity to Matross Smith (who had been forced) to escape, and to carry off the pouch, containing 15 rounds of grape for the gun, which was all the

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ammunition they had, excepting one or two rounds: and Matross Clarke also succeeded in escaping with two boxes of tubes, &c. &c. and got back to the shed.

The mutineers reached Major Pierie's valley about half past three o'clock: here they halted, and began to abuse the men in the rear for not coming to the front to assist in dragging the gun up the hill; and said that if they did not come, the gun would be turned upon them. This caused much abuse and fighting; and a few men went from the rear to the gun. At this time, Major Wright came with a message from the Governor, desiring them to surrender unconditionally,—which they refused. The Major went back to the Governor, and soon after returned with Major Hodson, and again delivered the same message; but in vain; the infatuated mutineers still demanded a pardon and issues of spirits; and on no other terms would they surrender. These officers again went back to the Governor, who still continued firm, and replied that unless they surrendered unconditionally, Major Kinnaird had received final orders to put the whole of them to death. This message was again delivered by Major Hodson:—most of them submitted immediately; but about eight or ten of the most daring, ran up the hill a few yards with their firelocks cocked, and presented at Major Kinnaird's party, and were about to fire, when Major Hodson and myself ran up to them, and told them they were mad, in drawing destruction on themselves, and the men who had surrendered:—advised them also to surrender with the others, and trust to the Governor for mercy. They sullenly came down and submitted.

It was now day-light, and the prisoners in number 75, were secured and marched to High Knoll: but a great many of the mutineers left their party between the Alarm-house and the time of their surrender.

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I was much indebted to Mr. Hall, the conductor, for his cool, steady, and soldier-like conduct on the night of the 23d, and particularly in spiking the two guns after they were in possession of the mutineers.

E. S. BROUGHTON.

St. Helena, 25th December, 1811.

C. *Lieutenant-Colonel Smith's Report of Occurrences, which took place in Garrison, on the Evening of the 23d Instant.*

As soon as I was informed there was a disturbance in barracks, which was about a quarter before 9 o'clock, and Captain Pritchard came and spoke to me, concerning the ammunition chest in the guard room, I directed him to go down and have the ammunition destroyed by throwing water upon it. I then sent for all the keys of the magazines, chests, and laboratory, which were brought by Serjeant Clenchman, and secured in my house. I then went down to the guard, and told the officer I wished to speak to the men a few minutes. I went into their guard room and told them, that I was one of the committee which sat that day, and that the Governor would arrange every thing to-morrow for them, and I doubted not to their satisfaction. They made answer, "It is too late now, and that they would not stay," and immediately rushed out of the guard. I used all my endeavours to persuade them to fall in: but the mutineers, at that instant, came on the parade, and surrounded me. I tried to persuade them to go back again; they said, "No! they came for ammunition, and ammunition they would have." Some of them immediately went in the officers' guard room and broke open the chest; but finding all the ammunition in it spoiled, they ran down to the laboratory and demanded the keys. One of them called out,

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"I have got a key," and immediately I heard the door knocked open with a thirty-two-pound shot that he had taken from the pile that stood near the spot. They had taken out a barrel of ball cartridges, and were supplying themselves when I got there. I immediately put my hand on the barrel, but three of them charged their bayonets on me, and told me they would run me through if I attempted to prevent them. They then proceeded up the valley as fast as possible. I observed that part of the garrison, which had been collected by the officers, coming down the upper street. I proceeded to the foot of Ladder Hill, met them, and gave orders for them instantly to repair to the Governor at Plantation-house. Major Wright having proposed to follow the mutineers, and try if he could persuade them to come back, I approved of the suggestion, and ordered him to proceed after them. I then returned to the main guard, and got together what men I could, and placed two twelve-pounder carronades, loaded with grape, between the church and garden-gate, looking up the town. Things remained in that state until the morning of the 24th instant.

E. C. SMITH,
Lieutenant-Colonel.

N. B. In the above report I have omitted much abuse and scurrility, vented by the mutineers.

D. *Major Wright's Report, 23d December, 1811.*

To Colonel Alexander Beatson, Governor, &c. &c. &c.

SIR,

IN compliance with your orders, I send you the following statement of the different transactions which took place on the evening of the 23d instant, and the morning of the 24th.

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On the evening of the 23d, between 8 and 9 o'clock, Serjeant Russel called me aside from Captain Knipe's door, and told me he did not like the appearance of the men; that they were assembliug in parties about the street, and in barracks. I went up as far as the bridge, where I met with some officers, and enquired if they saw any thing suspicious or incorrect, and related to them what I heard. They said, they saw nothing improper; and then went with me to Colonel Smith (the commanding officer) to report the circumstance, and from thence to the mens' barracks, and remained there some time. There were in barracks two of the light infantry company, whom Captain Sampson found intoxicated and noisy; but they became quiet and went to their cots. Every thing seemed perfectly regular; and the officer of the barrack guard, and Serjeant-major Honeyburn, told me they had not observed any thing improper or suspicious. I then left the barracks, accompanied by the other officers, and remained at Captain Cole's. We had not long been there, before a report came, that the soldiers had got out of barracks, and were coming down the street. We immediately proceeded towards the barracks, and met the men with charged bayonets, rushing down the avenue: we endeavoured to stop them, but in vain.

Finding our attempts to stop them useless, we collected the whole of the men in barracks, and all the out-layers, and brought them to the foot of Ladder Hill, where I left them: but upon hearing the mutineers had gone up Side-path (with permission from Lieutenant-Colonel Smith) I followed them, and overtook the main body of them, a little past the turn at the Alarm-house; where I stated to them the impropriety of their conduct, and endeavoured all in my power to persuade them to return to their barracks, which they positively refused: and finding I could not bring them back, I quitted them, and joined the party at Planta-

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tion-house. After reporting to you my unsuccessful attempts to bring the mutineers to a sense of their duty, I proceeded, in obedience to your orders, to inspect the positions occupied by the troops at the outside of the Plantation-house enclosure: after reporting which, I was about to assume the command, when I was called back by the Town Major, and informed, it was your wish that I should meet the mutineers, who had possession of the Lieutenant-Governor's person, and once more point out to them, the folly and madness of their persevering in such outrageous conduct, and to advise them to surrender. This command I executed; and prevailed on the mutineers to halt in a deep valley, where I knew they would be completely commanded by our troops and guns. When here, I endeavoured to prevail on them to acquaint me with the nature of their grievances, in order that I might lay it before you: but no one in particular would come forward and speak. At length, seeing Robert Kelly of the grenadiers near me, I desired him to declare what it was they had to complain of, promising him that he should not be considered as a principal in the mutiny in consequence of his speaking. He began, by stating the hardships they were under on account of dress, ornaments, &c. &c.; but was interrupted by many of his associates, who called out to him, "Speak the truth, Kelly, you know it is not *that*;" upon which he turned away, saying, as he retired, "the men never had a more comfortable dress than they have now." What I at length understand to be the real cause of complaint, I reported to you that night.

As I continued to be employed by you in treating with the mutineers, I had no opportunity of remaining with the troops in command, until after the surrender: but from time to time I gave such intimations to Major Kinnaird, as appeared to me neces-

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sary, and pointed out to him what I considered to be the most advantageous positions for him to occupy.

I have the honour to be, Sir,
your most obedient Servant,
J. A. WRIGHT,
Major.

James's Town, 30th December, 1811.

E. *Major Kinnaird's Report.*

On Monday, the 23d of December, 1811, I came on the duty of field officer of the week; and the preceding day I *happened* to be left senior officer in garrison: and had occasion, at different times, to report to the Governor, symptoms of dissatisfaction evinced by the men in barracks. Until near seven o'clock that evening (Monday) I had been detained on a court of enquiry. I had been directed to correspond with the officer commanding at Ladder Hill; and having made a few arrangements with the artillery in town, at about a quarter past nine o'clock, I went to my house to answer a letter from Captain Hodson, at Ladder Hill: at the same time sending back a confidential person to inform me of any extraordinary occurrence in barracks.

I had not finished my letter when the messenger returned, and informed me, the men in barracks were turning out. I dispatched my letter to Captain Hodson; and in hastening towards the barracks, Serjeant-major Evans and several orderlies came to me. One I sent to inform Colonel Smith and the officer of the main guard. At the foot of the trees, I came in sight of the mutineers, and observed them make a momentary halt; then, in the most tumultuous manner, they rushed down the street, passing me opposite the Slaughter-house. In their rear were Major Wright,

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Captains Sampson and Cole, who, taking the alarm from my messenger, had preceded me up the street, and caused the halt I observed.

I ran to the foot of the trees, and had two pistols discharged, as a signal to Ladder Hill to fire a general alarm, which was instantly obeyed. I then directed Lieutenant Thorn to hasten to the barracks, and order the drummers to beat to arms, to collect the artillery, and march them to Ladder Hill corner. Coming there with Major Wright and Captain Barnes (the other officers having returned to assist in assembling the men in barracks), I found Captain Pritchard and several men (outlayers), had joined us. I served out to this party a small quantity of ammunition, intending to follow the mutineers down the street, hearing they had gone to the main guard. I was soon informed, however, that they had returned, and proceeded up the Side-path road. Major Wright determined to follow them alone, as I had to proceed to Plantation-house, with what men I could collect. Captain Barnes was sent to communicate the same to Colonel Smith, the commanding officer in garrison. The senior officer in barracks soon joined me at Ladder Hill corner, with all the men he could collect. The whole were assembled without regard to corps, and might amount to (including officers) 120. All the officers had joined, and we marched from town in less than half an hour from the first breaking out of the mutineers.

Having that day seen the orders given to Captain Hodson at Ladder Hill, and received orders for my own guidance, I was desirous of sendiug a messenger, before the column, to inform Captain Hodson of my approach, and to proceed on to the Governor with the same intelligence: and Captain Pritchard, the Governor's aid-de-camp, handsomely offered his services on the occasion. I directed Captain Sampson to proceed with the party, and

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Captain Braid (giving him four file from the rear of the column) to join Colonel Smith for the present, in order to collect all the men he could, and to send me a reinforcement. After mounting my horse, I took a light in my hand as a signal to Captain Hodson, passed my party, and had ammunition ready on their arrival at Ladder Hill; where they were halted, and served with four bundles per man. From this post, I sent Lieutenants F. Seale and Thorn with ten file, as an advanced guard, with orders to wait my arrival at Red Hill gate, or obey what orders they might receive from the Governor; and to inform him and the commanding officer of High Knoll of their arrival. The steady appearance of the men at Ladder Hill, seemed to inspire my party with confidence. I also assured them there was nothing to be apprehended from the guns of the East Brigade, which seemed to be the object of the mutineers; being confident Mr. Hall would spike them, as a measure I had recommended to him in the morning. On leaving town, there remained Lieutenant-Colonel Smith, Captain Braid, Lieutenants Hunter and W. Seale on the main and Barrack guards, with about 80 men, including the marine and laboratory departments; about 40 more joined.

Opposite High Knoll, I was met by Captain Pritchard, returning with orders from the Governor. At Red Hill gate, Major Hodson waited my arrival, with orders for posting the detachment. My advance party had been sent on to the gate leading to Major Pierie's. From the rear I counted off twenty file to guard the Francis Plain-path, leaving Captain Sampson in command. At Plantation-house gate, I took ten file, who, with Captain Barnes, I posted on the road leading to Casons, where I found a field-piece, and a detachment of volunteer artillery. With what remained I proceeded towards the advanced party; and upon the road, Captain Desfountain of the volunteers, with a

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field-piece, was posted in a commanding situation. At Major Pierie's gate I found the advanced party: and there, with the troops I had with me, I occupied a strong position; and with the advance, proceeded to the ravine, taking possession of the only pass by which, on that road, the mutineers could advance to Plantation-house.

Having made these arrangements, I sent Lieutenant Thorn to inform the Governor of the position I had taken up. Some time after, a servant of Colonel Broughton's came in with intelligence of the approach of the mutineers, and of their having taken his master prisoner. I immediately sent Lieutenant Thorn to the Governor to inform him of this, and of my intention to withdraw my party in advance, with my reasons for so doing. Major Wright soon came to me; and while consulting on the measure proposed, Mr. Baildon, who had been sent to me from the Governor on the same subject, came up. Major Wright went to meet the mutineers, who were then near the place I before occupied in the ravine. Four men, as an advance from the rabble, fell into my chain of sentinels, answering, when challenged, "Friends of Colonel Broughton," saying, "They wished to propose terms to the Governor:" and having them sufficiently within the pass, I challenged them from the edge of the hill, and ordered them to halt. A correspondence between them and the Governor, through Majors Wright and Hodson, brought on day-light; during which time the detached parties joined me on the brow of the hill, looking down on the mutineers, who were within pistol shot. When all had joined, the front extended from Major Pierie's garden wall, to the fence running parallel with it, in an oblique direction; shewing the mutineers only the right. Presuming on their number, they became clamorous, and made a shew of advancing. Having then sufficient light to discover the rabble below, I

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brought up the left; and two field-pieces were placed so as to enfilade the only road by which the mutineers could approach. Seeing their perilous situation, they gave up Colonel Broughton, who, on coming up, was received with presented arms.

The mutineers still retaining their arms, I was apprehensive they might attempt a retreat; to prevent which, I ordered Captain Sampson (who with a strong detachment had been in reserve) to advance over the fence to the right, where he had complete command of the pass in their rear. The manner of their surrender becoming a question, I again sent Lieutenant Thorn to the Governor for instructions, keeping my party fully prepared to carry into effect, the former decided orders I had received, should it become necessary. Major Hodson, who still remained with them (Major Wright having gone to the Governor), at last succeeded in persuading them to lay down their arms and accoutrements.

Major Wright, returning from the Governor, brought orders that the artillery only should escort the prisoners to High Knoll; and there lodge them under the care of Lieutenant Thorn. These orders I obeyed, and made a report to the Governor.

DAV. KINNAIRD,

St. Helena, 28th December, 1811. *Major St. Helena Artillery.*

F. *Extract from Captain Benjamin Hodson's Report.*

To the Honourable Colonel Alexander Beatson, Governor, &c. &c. &c.

HONOURABLE SIR,

"AGREEABLY to the instructions I received from you on Monday, 23d December, 1811, I proceeded to Ladder Hill, and took the command. As I supposed the intention of the mutineers would

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be to seize this post, I distributed what men I had, to the guns pointing on the road leading to the town ; the whole of the men I expected, had not at this time arrived. About twenty minutes before ten o'clock that night, I heard a great shouting in several parts of the town, and two or three muskets were discharged in the upper part of the street below the officers' barracks. I immediately fired a general alarm ; and at that moment was reinforced with a party of artillery men I expected from Banks's guard. My detachment now consisted of two lieutenants, one volunteer, one serjeant-major (invalid), one drill-serjeant, nine serjeants, six corporals, nineteen gunners, two drummers, forty matrosses of artillery, and two privates of infantry (telegraph officers.) At the instant the alarm was made, a very heavy shower of rain came on, and caused such darkness, that I could not distinguish any object in town, to which I could direct a fire. I remained with the men at the guns, endeavouring to discover what route the mutineers had taken ; and when the rain cleared off, I observed a large body of men moving on the road leading to this post. I concluded they were mutineers marching to attack me, and prepared the men to receive them with firmness, and was on the point of firing on them with grape shot, when Lieutenant Wilson advised me to wait a little, until they came into a more open part of the road, where I could bring more guns to bear on them ; and by that time I might be able to ascertain whether they were mutineers, or friends, particularly as a lanthorn was seen moving very quick in their front. My advanced picquet shortly after challenged Major Doveton, the commandant of volunteers, who informed me that the party advancing were friends proceeding to join the Governor, and that the mutineers had gone to Deadwood shed. Captain Pritchard then arrived with the same intelligence, and soon after Major Kinnaird (who

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rode with a lanthorn) and Captain Hodson, the Town Major, came and offered me a reinforcement from the party that was approaching: which however I declined, as it was not at all probable that the mutineers would attack me on the town side. After serving that party with musket ammunition, I made dispositions to receive an attack from the country side, and remained with the men at their quarters the whole night.

In the morning I was informed the mutineers had surrendered at discretion; but as I was desired to keep my station, I moved a ten inch howitzer loaded with canister shot; which, to check any rapid advance that might be made, was placed about one hundred yards on the road, on the outside of the works. As the pass is very narrow, a single discharge would make great slaughter; and throw any body of men into confusion, and this in a situation where my guns, on the inside of the works, would have full effect.

The next day I received an order from you to advance two guns on the first turning of the road, above the soldiers' barracks, with directions to fire on any party that might attempt to force their way out of the barracks. In obedience to that order, two 5½ inch howitzers, being the two most disposable guns I had, were advanced under the command of Lieutenant Wilson; and, at the same time, I pointed as many guns to the parade, opposite the main guard, as could be brought to bear on that point.

This, I trust, you will find to be a correct statement of the occurrences of the mutiny which commenced on the night of the 23d of December 1811, as far as concerned the post which I had the honour to command.

I have the honour to remain, Honourable Sir,
your very obedient Servant,

B. HODSON,

Ladder Hill, Dec. 31, 1811. *Captain of Artillery commanding Ladder Hill.*

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G. *Captain Sampson's Report.*

To Colonel Alexander Beatson, Governor, &c. &c. &c.

SIR,

HAVING received a letter from the Town Major, dated the 29th of December, 1811, directing me to state, for your information, the circumstances of the night of the 23d instant, as far as they came within my knowledge, I send you the following Report.

At half past eight o'clock on the evening of the 23d, Major Wright sent for me, by Sergeant Russell of the grenadiers, a confidential non-commissioned officer, who informed me, that he had every reason to believe the troops meant to rise in the course of the night. In my way to Major Wright's, I met Mr. Doveton, who told me, he had positive information to the same effect; and requested me to go to the barracks, and let the soldiers know, that measures would be adopted on the 24th, much to their satisfaction. Major Wright, and some other officers of the regiment, with Captain Cole of the artillery, and myself, hurried up to the barracks. I went into the rooms occupied by my Company, and perceived an unusual agitation among the men. I enquired what was the matter, and informed them, as Mr. Doveton had requested, 'that measures would be adopted the next day, much to their satisfaction,' and ordered them to bed. My explanation appeared to satisfy the whole of them, with the exception of Berwick and Anderson, privates, who were intoxicated, and whom I forced to their cots. After this, while we remained, every thing was quiet. I enquired of Captain Knipe, how the grenadiers were? he replied, 'perfectly still, and at rest for the night.' All the officers then quitted the barracks, and went down the town: but keeping on the alert. Major Wright and myself went with Captain Cole

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to his house; and we had not been there more than five minutes before we were informed the men were rising. I met my orderly, who told us the troops were breaking out of barracks. Major Wright, Captain Cole and myself, hurried up to stop them; and when arrived near the barracks, we met them coming down with charged bayonets. Major Wright called out to *us*, to resist them, and drive them back to the barracks. In a moment we met, and stopped the head of the column: but as the rear charged the front, and pressed forward with great impetuosity, it was impossible to prevent their proceeding.

Major Kinnaird with some other officers then joined; and it was determined to make a general alarm. Majors Wright and Kinnaird went down after the mutineers, and I was directed to go to the barracks and collect what men I could. In passing up, I met several, going to join the mutineers; but with the assistance of other officers forced them back: and when in the barracks I observed every officer zealous and active. The outlayers were joining us very fast; so that in about twenty minutes I was at the head of 100 men well officered. I then marched from the barracks, expecting to meet them before they left town; but as I marched down the street, they went up Side-path. When I got to Ladder Hill corner, I there met Captain Pritchard with a few men: and on consulting with Majors Wright and Kinnaird, we determined to march directly to Plantation-house to the assistance of the Governor, as we were informed that *he* was their object. Major Wright got a horse and rode after the mutineers to endeavour to bring them back, while the detachment advanced to Ladder Hill. Here we procured ammunition. Major Kinnaird then ordered Lieutenants F. Seal and Thorn to advance to Plantation-house with 20 men, and inform the Governor we were on the march with one hundred men.

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When we got to the tank at the foot of High Knoll, Major Hodson met us, with orders from the Governor to divide our force. Major Kinnaird went forward with about 40 men, and 40 were left with me to guard the foot of High Knoll, should the mutineers advance by that route. The following was the order of my position, Captain Knipe with 12 men at the head of the road leading from Mrs. Harper's; Lieutenant Torbett in advance, to flank the above road, the wall under which his party was posted, forming a breast work;—Lieutenant Chadwick, low down on the left of the tank, on the opposite flank; another picquet, still further on the left of Lieutenant Chadwick, to watch Francis Plain, should they cross that way. At this time a field-piece arrived from High-Knoll, which I put under Lieutenant Mason's charge, with men to work it whom I could depend on, and placed in the best situation to rake the road. The rest of the men I ordered a little in the rear, to act as occasion might require:— and having made these arrangements, I was fully satisfied that my post could not be forced by the mutineers.

About four o'clock in the morning, the Reverend Mr. Jones brought me orders from the Governor in writing: but as I had no light to enable me to read them, Mr. Jones informed me of their substance, viz. that I was to march thirty chosen men to Plantation-house, where I should receive orders: he likewise informed me, he believed it was wished that I should attempt to rescue Colonel Broughton, and that if we succeeded, every man would receive a reward of £20. When I got to the Plantation-house gate, I there met Captain T. H. Brooke of the volunteer corps, reported orders from the Governor similar to those I received by Mr. Jones; but that I was to wait for further instructions on that head. Captain Pritchard (aid-de-camp) then ordered me to join Major Kinnaird, whom I found in a very strong position, within

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pistol shot of the mutineers. Our force then amounted to about 90 rank and file, and, I believe, ten officers. Major Kinnaird took me to reconnoitre, and I observed it would be impossible for the mutineers to escape, as they were completely impounded; and in the worst possible position they could have chosen. From this time, being under the command of Major Kinnaird, I have nothing to communicate but what you will be informed of by that officer.

I have the honour to remain, Sir,
your obedient and humble Servant,

C. SAMPSON,
Captain of Infantry.

James's Fort, 30th December, 1811.

H. *Captain Braid's Report.*

On Monday, the 23d of December, 1811, I was on the duty of Captain of the day; and in the evening I determined, in company with Captain Barnes, to remain at the house of Mr. Everton, near the barracks, where we could have the earliest intelligence of whatever might occur; and from which situation we could, in some measure, observe the conduct of the men in barracks.

At about a quarter before ten o'clock, we perceived an unusual bustle and noise in one of the barrack rooms opposite to us; and it soon became evident, that the men of the St. Helena regiment were turning out into the Barrack Square, with arms and accoutrements.

We proceeded towards the barrack gate, and were joined by Lieutenants Thorn and F. Seale. The gate was locked; but we could easily perceive the mutineers were assembling rapidly inside. I instantly dispatched Lieutenant F. Seale (who volunteered his service) to give information of these circumstances to

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Lieutenant-Colonel Smith, the commanding officer; to Major Kinnaird, the field-officer on duty; and to order the main guard immediately under arms.

Our repeatedly calling for the gate to be opened, and for the officer of the barrack guard, Lieutenant W. Seale, to appear, was of no avail: it was but too apparent the guard, officer and all, were now prisoners to the mutineers. However, our incessant application for admittance, and the assurance they now had of their motions being discovered, seem to have pressed them to a determination of venturing out, sooner than they intended; and while their numbers were much below what they expected to collect.

The wicket being opened, about one hundred of them rushed out: the whole appeared fully dressed and armed. We remonstrated with these deluded men as they passed; but to no purpose. There were also many stragglers following to join them, most of whom were sent to the barracks.

On the way down the street we met Majors Kinnaird and Wright, and many other officers. The general alarm was made, and all the men of both corps who could be found, were assembled at the foot of Ladder Hill, and marched off into the country.

Major Kinnaird ordered me to remain with Lieutenant Colonel Smith, to collect all the force we possibly could, and to send him a reinforcement to Plantation-house. I immediately joined Lieutenant Colonel Smith on the lower parade, and communicated to him the order I had received from Major Kinnaird.

Upon enquiring into the state of the main guard, I was astonished to find no opposition had been made to the approach of the mutineers; no attempt to defend the magazine; and in short, that the main guard were not even under arms at the moment. I had the names of the men of this guard called over, when it

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appeared twenty-five had absented themselves, and joined the mutineers.

In going the rounds, I found the castle gate open at 12 o'clock at night: and there being no officer for the castle duty that night, I had two serjeants placed there and the gate locked.

The good conduct of Mr. Everton on that night, deserves to be noticed.

ANDREW BRAID,
Captain of Artillery.

St. Helena, 28th December, 1811.

I. *Captain Barnes's Report.*

On the night of the 23d instant, Captain Braid and myself having stationed ourselves at the house of Mr. Everton, directly opposite to the barrack windows of the light company, that we might be in perfect readiness should we be called upon, were informed, about twenty minutes before ten o'clock, by Everton (whose vigilance deserves great praise) that there was a violent tumult in the barracks, and that the soldiers were attempting to force their way through the gates. Captain Braid and myself immediately went there, and were directly joined by Lieutenant F. Seale and Lieutenant Thorn. Lieutenant Seale was instantly dispatched by Captain Braid to inform Major Kinnaird, the main guard, &c. &c. of what had taken place. In less than five minutes after we had got to the gate, the wicket was opened, and about a hundred men, most of them fully armed and accoutred, rushed out. It was in vain for three of us to attempt opposing force to this body, and all that we could say to induce them to desist from their mad and disgraceful enterprize, was useless;—declaring throughout "*we want our rights, and will have them before we come back.*"—They proceeded down the street very quickly:—we followed, using our utmost endeavours to persuade every

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straggler following them to return to his barracks; in some instances we were successful. Near the gate leading into the parade before the officers' barracks we joined Majors Wright and Kinnaird, Captains Sampson and Cole, and others. Lieutenant Thorn was dispatched by Major Kinnaird with orders to the barracks; as was Captain Sampson by Major Wright. Two pistols were fired by Major Kinnaird, as a signal to Captain Hodson at Ladder Hill, who almost instantly made the general alarm. It was then determined to collect all the men we could, at the bottom of Ladder Hill road, where we found Captain Pritchard with a few men. Having been joined by Captain Sampson and Lieutenant Thorn, with all the men they could find, we proceeded to Ladder Hill; Captain Pritchard having been previously ordered by Major Kinnaird to hasten to the Governor, to inform him he was marching to Plantation-house with a considerable force. At Ladder Hill we received four bundles of ball cartridge for each man; and spare ammunition was carried by six black men. After reaching Red Hill house, where we met the Town Major, we were detached in parties to various positions. With 20 men, I was ordered to take post on the road leading to Cason's Gate, which I did; and found there a field-piece (a three pounder) with two volunteer officers, Lieutenants Wright and Blake) and 24 black artillerymen. I took charge of the whole, and disposed them so as to command every approach to my post. A little before day-light, I was ordered with my party and guns (another three pounder, with Lieutenant D. Pritchard, having joined) to march down to the main body, under Major Kinnaird, which was drawn up in line, near Major Pierie's lower house, upon a small flat on the brow of a hill looking down upon the mutineers, who were within pistol shot of us. I fell in, with both field-pieces on the left flank, so as completely

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to enfilade the only road by which they could attempt to pass, and soon after the rebels surrendered at discretion.

JOHN BARNES,
Captain of Artillery.

30*th December*, 1811.

K. *Lieutenant F. Seale's Report.*

St. Helena, December 28*th*, 1811.

On Monday evening, the 23d instant, Serjeant Russell of the grenadier company having reported to Captain Knipe, between eight and nine o'clock, that a mutiny was likely to take place that night, in the garrison, I went to the soldiers' barracks with Major Wright and several other officers; where we remained until some time after nine o'clock: and not finding the least misconduct among the men then in barracks, we retired to our quarters.—Before ten o'clock, I heard a great noise in the soldiers' barracks, and immediately went up to the gate, where I found Captains Braid and Barnes, with Lieutenant Thorn, endeavouring to get admittance. I heard Lieutenant William Seale and Serjeant Major Honeyburn among the rebels, endeavouring to pacify them. Captain Braid requested me to go and inform Majors Wright and Kinnaird, as quick as possible, of the state of the men in barracks. In my way, I met Lieutenants Mason and Torbett coming towards the barracks; who informed me, that Lieutenant James Wright had gone before for the same purpose. I therefore returned with them immediately, and saw the mutineers rushing from the barrack gate. I ran forward, and called to them, but to no purpose: and then passed them on the left, with an intention, if possible, to stop some of their rear: and Lieutenants Chadwick, Mason, and Torbett, and Serjeant-Major Honeyburn, having joined me, we succeeded and sent back immediately, Nimmo,

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Walker, Edmonston, Cain, Butler, and Beck, to their barracks. It was with some difficulty we prevailed on them to return; saying 'that if they did not join the opposite party, they (the mutineers) would *skiver* them, and put them to death.' Captain Sampson ordered us to march, with what men could be collected in barracks, and join Major Kinnaird at the foot of Ladder Hill. We proceeded to that post, and after every man was supplied with ammunition, Major Kinnaird gave me the command of the advance guard, composed of Lieutenant Thorn, two serjeants, and twenty rank and file; with orders to proceed until I reached Red-Hill gate; and there to halt until he came up. When there, the Town Major ordered me to proceed with my party to Major Pierie's gate. Major Kinnaird soon came up to me with the detachment: halted and ordered me, with the advance party, to occupy the pass in the ravine below; and in the night to retire or advance as the nature of things required. A little before day-light, I received orders to join the main body in line: and shortly afterwards, the mutineers halted in the ravine, about the same place I before occupied.

F. SEALE,
Lieutenant.

L. *Lieutenant Phillips's Report.*

High-Knoll, Monday, December 23d, 1811.

SYMPTOMS of dissatisfaction having appeared among some of the troops in the garrison yesterday, and it having come to the Governor's knowledge, that they intended to mutiny, I was sent for by him and the Council, at 2 P. M. and received orders to keep a strict look-out from my post, and to fire upon any party of men seen in arms, approaching Plantation-house; and to disperse them. At 5 P. M. I returned to High Knoll; and immediately made every preparation to defend my post, by loading the guns with grape, placing centinels in advance, and securing the

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gates and tower. At 9 P. M. a reinforcement of one serjeant, one corporal, one gunner, and seven matrosses, joined my guard; making the total number, one lieutenant, one serjeant, two corporals, one gunner, sixteen matrosses, and one private. Some of the mutineers having heard that this party was ordered to reinforce High-Knoll, told them to inform me, 'that they would soon be after them, and perhaps be there as soon as they would.' Between ten and eleven at night, I was employed in serving out ammunition to the different parties, and getting out the field-pieces, &c. for the volunteers: and at this time, about twenty volunteers joined my post. They did not, however, long remain with me, as I thought it better to order them to Plantation-house. At a quarter before 10 P. M. the general alarm was fired at Ladder-Hill. I immediately repeated it. At half-past 10 P. M. I perceived a light going up Side-path: hailed it, and ordered them to stop; but it proved to be Mr. Balcombe. I kept a good look-out for the mutineers during the night, with the night-glasses; but could not perceive them,—keeping my portfires constantly lighted, and hailing every body in sight, passing and re-passing.

Tuesday morning, at about half-past 12 A. M. I received information, by a running-hand from the picquet guard under High-Knoll, that the mutineers had been at Long Wood, and had taken the Lieutenant-Governor prisoner, as well as Mr. Hall, the conductor; that they had pressed Serjeant Lassels, and some artillerymen, to assist them in manning a three-pounder,—the only one of the west brigade that had not been spiked,—and that they were approaching Plantation-house with the Lieutenant-Governor in their centre. At half past one, A. M. I perceived two lights coming round under the Alarm-house, and at times could see, with our night-glasses, a great number of men. Conjecturing thes were the mutineers, I immediately gave informa-

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tion to Captain Sampson, commanding the picquet, and to Plantation-house; keeping my guns pointed at them, and my portfires lighted. But I did not conceive it proper to fire upon them, knowing Colonel Broughton was in their possession. At about half-past 2 A. M. the mutineers had nearly reached Major Pierie's house, when I hailed them with a large speaking trumpet, and desired them not to advance, or I would fire upon them immediately. They soon halted, and at the break of day, I perceived, above Major Pierie's house, a large detachment of artillery and infantry, and some volunteers, with their front facing the run of water, and shortly after, I saw the mutineers, apparently about 90 in number, in the ravine, close under our detachments: and very soon, the mutineers appeared to have surrendered. At about 7 A. M. the whole of the mutineers (75) taken in arms, were marched here, by Major Kinnaird and his detachment. Lieutenant Thorn, with 21 artillerymen, reinforced my guard, and the whole of the prisoners were put into one barrack. I then loaded one 8-inch howitzer, and two 18-pounders, with grape, and pointed them directly upon the prisoners; and also placed seven centinels, with loaded pieces, to watch them, and to keep a strict look-out. I had also a guard of one serjeant, three corporals, and fourteen matrosses, in the room opposite the prisoners, with 20 rounds each of ball ammunition; and a guard on the tower of one serjeant, three corporals, and twenty matrosses. I deemed it further expedient, for fear of being surprised by the prisoners, or any of their associates, to dismount the four 3-pound field-pieces, and to lock them up in the tower; which seemed to be the more necessary, as there were two ammunition carts, with field-piece ammunition in the ordnance store-room, outside the tower. These precautions were accordingly taken, and every thing here remained quiet.

GEO. L. PHILLIPS,
Lieutenant of Artillery, commanding High-Knoll.

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M. *Lieutenant W. Seale's Report.*

St. Helena, 29th December, 1811.

On Monday evening the 23d instant, I had the command of the barrack guard; and about a quarter before 9 o'clock, Major Wright, in company with several officers, came and enquired if I had perceived any misconduct in the soldiers in barracks: I answered, no! the men seemed quite orderly. Lieutenant F. Seale requested I would be particularly alert, as Serjeant Russell had informed Captain Knipe, that the soldiers intended to mutiny that night; but the uniform conduct of the men at that time, as also in the former part of the evening, induced us to believe the report was erroneous. The officers quitted the barracks about half past nine o'clock, and after passing out those soldiers who have permission to sleep out of barracks, I ordered, as usual, the serjeant of the guard to put the lights out. On his return, I enquired if he had performed this duty, and if the men were quiet in barracks? "he said he had put out the lights; but that immediately after the men began to take down their arms and accoutrements, and were very turbulent." I desired him to accompany me and point out the room in which the men were irregular: he directed me to one of the grenadier barracks, in which I saw several men accoutred. I asked them the reason of their being dressed in that way: they answered, "because they felt themselves aggrieved." At this moment the light infantry rushed into the upper square, and called out, "Grenadiers! are you not ready yet? fall in; fall in!" I endeavoured to prevail on them to return to their barracks, but without effect. Whilst some listened, others upbraided them for it. I was then forced by Anderson, private, to return to my quarters, and con-

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sider myself a prisoner, desiring me at the same time to give up my sword and the keys of the gates; which refusing to do, my sword was seized, and the keys were wrested from me. But on their returning from the guard room, I observed an opportunity of leaping among them and recovering the keys. Having effected this, I returned to my quarters; but was followed by the mutineers, who still insisted upon having the keys, and the gates being opened. Some cried out, "Put the bayonet through him, and then he'll give them up." Hearing the voice of officers at the gate, I went to them, and found Berwick and Mason, privates, had posted themselves, one on each side the gate; declaring they would charge the first officer that entered. During the outrageous conduct of the rebels at the gates, they said, "they had frequently reported that they were in a state of starvation, without redress: and that they had no intention of injuring any one; but that the Governor was their object, and have him they would." Serjeant-major Honeyburn then came to my assistance; but one of the rebels immediately struck him, and desired him to go away. I secretly gave him the keys, and he took them to his quarters, and I then returned to the guard room. The mutineers followed me, still demanding the keys: and on my assuring them, that some one had taken them from me, they searched the room. Kennally, private, then observed, they could get out without them, by scaling the walls near the cistern; which he did; and the rest followed. As they were getting over the different barracks, Serjeant-major Honeyburn asked me if I had sent any one to inform the officers: I replied, it was impossible, as my guard were all made prisoners. Honeyburn however found an opportunity to pass the serjeant of the guard through his quarters, down the back part of his premises to the town. Finding it impossible to prevent the rebels getting out, by keep-

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ing the gates locked; and as there were some officers on the outside, I at length opened them: on doing which, those rebels who were within, rushed out. I then received an order from Major Kinnaird, for the drummers to beat to arms: which was accordingly done.

This is a true statement of what happened on the night of the 23d December, to the best of my recollection.

W. SEALE,
Lieutenant.

N. *Lieutenant Thorn's Report.*

High Knoll, 28th December, 1811.

About half past seven o'clock on the evening of the 23d instant, I was sent for by Major Kinnaird, who ordered me to perform the duty of adjutant of artillery, as Lieutenant Wilson was detached to Ladder Hill. He informed me, there was a degree of dissatisfaction shewn by part of the men in barracks: and directed me to go there and order the non-commissioned officers in whom I could place confidence, to keep on the alert, and inform me if any of the troops seemed to make preparations to quit the barracks. At about half past nine, the Serjeant-major came to my quarters, and informed me the light infantry were rushing out of their barrack rooms with their arms. I instantly ran up (sending the Serjeant-major to Major Kinnaird), and found the barrack gates shut: the men were collected inside, and the officer of the barrack guard was talking to them. Captain Barnes and Lieutenant F. Seale were now with me, The wicket of the gate was soon opened, when the men rushed out, most of them with charged bayonets: one of them struck Captain Barnes with his musket. I followed them as low as the foot of the trees, persuading them to return: but one only, Christian Beck, who told

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me he had been forced out of barracks, returned. I met Major Kinnaird and Lieutenant Torbett; the former discharged two pistols, as a signal to Ladder Hill. Major Kinnaird ordered me to run to the barracks, and desire the drummers to beat to arms: and by this time the general alarm had fired from Ladder Hill. I ordered all the artillery (previously supplying them with arms from the store rooms) to fall in near the barrack gate with the remaining infantry, whom Captain Sampson was collecting. We proceeded to the foot of Ladder Hill, where we joined a party under Major Kinnaird: the whole then proceeded to Ladder Hill, and there received ammunition. Lieutenant F. Seale and myself, with twenty men, were ordered to march as quick as possible to Red-Hill house. On our way, we were met by Captain Pritchard, who directed us to march immediately to Plantation-house, and report our arrival to the Governor: but meeting the Town Major, we were directed to advance towards Major Pierie's lower house, and watch the motions of the mutineers; and to oppose them if they attempted to advance to Plantation-house. Sometime afterwards, Major Kinnaird joined us with a strong detachment, and ordered our picquet to advance near the water run. Major Kinnaird then ordered me to go to Plantation-house and inform the Governor of the position he had taken up: but upon my return, I found the picquet had retired as far as a rise of ground at the back of Major Pierie's house. About one o'clock in the morning, a black man belonging to the Lieutenant-Governor, came to our party, and informed us the mutineers were advancing towards Plantation-house, with the Lieutenant-Governor as their prisoner: and about two hours before day-light, I perceived them approaching. They advanced to the same ground we before occupied with the picquet, and halted. At day-light, Major Kinnaird collected all his force and formed a line fronting

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the mutineers: but on seeing our line formed, one of their party called out, "We have surrendered." After an interchange of two or three messages between them and the Governor, they surrendered themselves prisoners, and were marched as far as Plantation-house gate; and afterwards, by the Governor's orders, were escorted, by a party of artillery and myself, commanded by Major Kinnaird, to High Knoll, were they were put into confinement. Here I remained with Lieutenant Phillips, having reinforced his guard with thirty men.

THOS. THORN,
Lieutenant of Artillery.

O. *Captain Pritchard's Report.*

To Colonel Alexander Beatson, Governor, &c. &c. &c.

HONOURABLE SIR,

IN detailing, according to your request, all the circumstances which came within my knowledge, relative to the late mutiny and sedition, which broke out in the St. Helena regiment, I shall state such occurrences as transpired before the 23d ultimo; and then proceed to mention such as subsequently took place.

Having received various private reports, that a mutiny was intended (with which I made you acquainted), but no precise hour of the night yet named, I resolved to wait the final intelligence of one of my emissaries; which I received, about ten minutes before nine o'clock, on the evening of the 23d. Upon being made acquainted with the intention of the mutinous troops, I instantly informed the senior member of Council (Mr. Doveton), and the commanding officer in James's Fort (Lieutenant-Colonel Smith): and apprised them that the seizure of the musket ball ammunition, in charge of the officer of the main guard (Lieutenant

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Hunter), was one essential part of their plan. And as I strongly suspected there was none but rifle ammunition in the laboratory, I recommended that the ammunition at the main guard, should instantly be destroyed by water; and that Lieutenant Hunter should be apprised of the intentions of the mutineers, which was accordingly done.

I remained a few minutes in the lower street with Lindsey, a soldier, (who has since been tried for joining the mutineers, and pardoned), and stated to him what I had heard, relative to the intentions of some of the infantry. He declared he knew nothing of it: and he was resolved to have nothing to do with it; and also that he would go and dissuade any who might be inclined to join them. I then went to the foot of Ladder Hill road, where I found William Boyles, private, centinel, whose steady and soldier-like conduct I witnessed, and therefore as it reflected the highest credit on him, I must embrace this opportunity of recommending him to your favour. I spoke much to him upon the subject of the intended mutiny that night, and found his information corresponded with what I had before learned. This soldier then most solemnly swore, that not one of them should pass his post if he could prevent it: I told him my determination; and whilst I spoke, I heard a body of men rushing down the street, crying out, "Fire! fire! stand out of the way!" I got in amongst them, and ordered them to stop and go back to their barracks: saying, with a voice sufficiently loud for them to hear, "that if they had grievances, they would be redressed in the morning." But this had no effect; and the greater part of them continued rushing towards the main guard. I seized many of them; but others forced their way; amongst whom was Dougle Fraser, private, who was intoxicated. He said they had been two years representing their grievances, but could obtain no

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redress; and that he would not stay: when retiring from me a few paces, he rushed at me with fixed bayonet, and with great violence. The point of his bayonet happily passed by me; but the force of the blow I received from the muzzle of his musket, felled me to the ground. About this time Mr. Doveton, and Lieutenant James Wright came up. Mr. Doveton expostulated with them for their infamous conduct, and demanded to be heard as a member of the Government. He told them, that if they had grievances, they should be redressed to-morrow. But all he, and Lieutenant Wright (who was equally active and zealous) could say, was to no purpose; they still persisted in the same mutinous and rebellious conduct.

This mob of mutineers had now passed towards the main guard, except about eight or ten; amongst whom, was Richard Cartledge, whom I seized, and some time afterwards sent to Major Wright, his commanding officer: from this man, the Major received information relative to the intended route of the mutineers:

About this time a general alarm was fired, and Captain Sampson, with officers, marched about 120 men from the barracks (who were perfectly regular), to the foot of Ladder Hill road. It was there determined that he should march towards Plantation-house; and he requested me to ride, as expeditiously as possible, to Ladder Hill, and acquaint Captain B. Hodson that the party ascending were friends: which I did, and after leaving some orders with that officer, I rode on with all haste to Plantation-house, and gave you information of the proceedings and intentions of the mutineers.

After conveying your orders for the different positions of the troops, I was directed to take charge of three field-pieces, principally manned from the volunteer corps. With these I remained until the morning; when I received an order from Major Kinnaird

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to join his detachment as soon as it was light: which I accordingly did; and soon after the mutineers were compelled to lay down their arms, and surrender at discretion.

I have the honour to remain, Honourable Sir,

your faithful and obedient Servant,

H. H. PRITCHARD,

1st January, 1812. *Captain and Aid-de-Camp.*

P. *Lieutenant Hunter's Statement of proceedings at the Main Guard, on the 23d December*, 1811.

DURING the day of the 23d instant, I understood from reports, that the men in barracks were discontented. At half past eight o'clock in the evening, Major Kinnaird visited my guard, and told me, he suspected a mutiny would take place, and desired me in that event, to fall in my guard and do my utmost to quell it. About nine o'clock Captain H. H. Pritchard came to my guard, and informed me the men intended to break out of barracks that night; and advised me to destroy the ammunition under my charge, as soon as possible, in order to prevent its being seized by the mutineers. Having every reason to suppose my guard was also concerned, I immediately took Captain Pritchard's advice, and threw water upon the ammunition and locked the chest; at the same time desiring the laboratory serjeant to have in readiness some useful ball cartridges and flints. About half past nine, hearing a noise as if from the barracks, I immediately ordered my guard to fall in: some reluctance was shewn. I then addressed them, and asked them if they would stand by their officer and do their duty as good soldiers: they said they would, and fell in. Presently I received a message from Lieutenant-Colonel Smith, commanding officer in garrison, to keep my guard in

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readiness; and shortly after, the Lieutenant-Colonel came down and thus addressed me at the head of my guard; "Mr. Hunter, don't fall in your guard in the rain, let them fall out, I wish to speak to the men in the guard room." I obeyed his order and the men ran into the main guard room, making much noise. We followed them into the main guard room, where he expostulated with them: but to no effect, as they used the most gross and abusive language. About this time (a quarter before ten) the mutineers were on the parade, to the amount of about 200. They approached my guard room with fixed bayonets, and called out, "Come my lads, we are come for you;" when the whole of my guard except the centinels, Corporal Brimmer and another man, joined them. I did not see my serjeants at this time. Every attempt of the Lieutenant-Colonel and myself to reason with them was ineffectual; they rushed into my guard room; broke open the inner door, and upon seeing the water issue from the ammunition chest, they quitted it greatly enraged, and ran to the laboratory and broke open the door. I called out for a few men to follow me (and they should be well rewarded), and we would prevent the mutineers getting at the ammunition. Not a man turned out for this service, and I immediately ran to the laboratory, but could not prevent the mutineers taking the ammunition, as several of them repeatedly laid hold of me and kept me off from the cask. They then ran up the street (about a quarter before ten), calling out "now for Long Wood!"

Not having seen my serjeants after the guard was dismissed, as before stated, I enquired for them, and presently saw them coming out of the Governor's garden, where, they said they had concealed themselves, to prevent the mutineers taking them, or being murdered upon refusing to join them.

T. M. HUNTER,
Lieutenant.

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Q. *Memoranda of Lieutenants Phillips and Thorn, of the Occurrences at High Knoll, from the 23d to the 30th of December*, 1811.

High Knoll, 24th December, 1811,—3 *P. M.*

LIEUTENANTS Phillips and Thorn having had several conversations with the prisoners, since the morning, persuading them to give up those who had excited them to commit acts of mutiny and rebellion, Gunner Kitchen of the artillery, and Dougal Fraser of the infantry, have made the following depositions:

"SISELL of the regiment, commanded the mutineers, and "assisted Nimmo and Berwick, privates, to swear the men in. "The nature of the oath was to seize the Governor, and to turn "him off the island. Sisell also told them, that upon his firing a "musket at the Alarm-house, he would be joined by the men of "Hold-Fast-Tom, Gregories, and Deadwood shed: and that this "man was the chief ringleader."

"NIMMO of the regiment, administered the oath, assisted by "Berwick and Sisell, with a bayonet held over the head of the "person sworn in, threatening death to those that did not take it, "and join their party."

"BERWICK of the regiment, assisted in administering the oath; "broke open the barrack gates, and procured volunteers for "them."

"HEWITT of the regiment, broke open the small magazine "door, and was very active in getting volunteers, and threatening "others with death if they did not join them."

"LINDSAY and SEFTON of the regiment, also took an active "part in the whole affair; but Kitchen and Fraser did not particularise what they did."

At about 5 P. M. Major Hodson informed Lieutenant Phillips,

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that he had understood it was intended to endeavour to rescue the prisoners: we therefore kept alert during the night, and in readiness to receive them: at the same time informed the prisoners, it would be death to the whole if they attempted to escape.—But they behaved very well, and appeared quite sorry for their conduct.

8 A. M. Lieutenant Dentaaffe, with an escort, brought Nimmo, Sisell, Berwick, and Anderson, prisoners to this guard. At about 11, A. M. a General Court Martial sat, and tried the following prisoners, viz. Nimmo, Sisell, Berwick, Anderson, Edgeworth, Wilsey, and Seager of the regiment, and Gunner Kitchen of the artillery: when they all (being found guilty,) received sentence of death. At ¼ past 7, A. M. the six first were hanged; and Wilsey, Seager, and Kitchen received the Governor's pardon. The remaining prisoners seeming rather dissatisfied that Lindsay, Sefton, and Hewitt, had not been confined, I informed the Town Major of it.

Thursday 26th.—All quiet during the night. The prisoners having heard that Lindsay, Sefton, and Hewitt, had been ordered to be tried, were quite satisfied, and said they deserved it; as many had been led astray by them, who afterwards quitted them on the road. At 10, P. M. Lieutenant J. Seale of the regiment, came to the Knoll with the prisoner Sefton who had been tried; and with the three men who had gone to give evidence against him, Lindsay, and Hewitt. The prisoner Sefton, appears very penitent, having continued all night in prayer, and requested that a clergyman might attend him in the morning.

Friday, December 27th.—The Rev. Mr. Boys came here to attend the prisoner (Sefton) who appears very penitent. I read the Garrison Orders to the guard and prisoners. At noon sent the prisoner Sefton to James's Fort to receive his sentence. At

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3 P. M. understood that Hewitt was hanged before the troops in garrison, and that Sefton and Lindsay received the Governor's pardon under the gallows. All quiet at the Knoll.

Saturday 28th.—Nothing material passed here. The prisoners behave very well, and appear very sorry for their conduct—promising never to behave ill again. Both Lieutenant Thorn and myself have endeavoured all in our power, to find out the writer of the anonymous letters, and told the prisoners we were convinced the Governor would forgive any one of them that would inform him; but they all declared they did not know; nor did they know any letters had been written, until they heard some had been found. The prisoner Sefton, who expected to be hanged, also said, he knew nothing of them.

Sunday 29th.—The prisoners having repeatedly requested of myself and Lieutenant Thorn to solicit the Governor to pardon them, making solemn protestations of behaving well in future, and having evinced a disposition of repentance and sorrow for their conduct, we were induced to write to the Governor on the subject. The Governor was pleased to answer us very favourably: we read his letter to the prisoners before the guard. They were very thankful,—and expressed themselves sensible of the Governor's clemency towards them; and protested one and all, that if the Governor would allow them to join their corps again their future conduct should shew their gratitude and the truth of their protestations. For these last three days, as the prisoners appeared sickly, from their being confined in so small a barrack, they were allowed to walk out in the square from 20 to 30 together, from 10 to 4 o'clock. All quiet here during the night.

Monday, 30th.—At 10, A. M. I received a letter from the Governor desiring the prisoners might be marched to the Plantation-house; excepting seven who were to be left in close con-

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finement. At 11 A. M. I paraded the prisoners, and marched them to Plantation-house, under an escort of 35 artillerymen:—leaving one corporal and six matrosses to keep charge of the remaining prisoners. There the Governor was pleased to pardon 48 of the mutineers, who were then marched to James's Fort to join their corps, by Lieutenant Thorn, and 20 men. He also ordered the following men into close confinement at High-Knoll, until an opportunity offered of sending them off the island.

R. Kitchen	Captain Cole's Company of Artillery.	D. Frazer	Light Company.
S. Cahill		T. Sullivan	
T. Williams		J. Kennelly	
Jacob Desney	Grenadier Company.	M. Maroney	
John Finnerty		John Hall	
John Grant		Nich. Coote	
James Clark		P. M'Guire	
Andrew Clarke		J. Mackle, Captain Statham's	
James Small		J. Ward, Captain Killin's	
E. Richardson		D. Finn, Captain Wright's.	
E. Randalls			

The prisoners all quiet.—The same precautions taken as before.

GEO. L. PHILLIPS,
Lieutenant of Artillery.

THOS. THORN,
Lieutenant of Artillery.

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Trial of Serjeant Lassells.

Island St. Helena, 31st December, 1811.

AT a GENERAL COURT MARTIAL re-assembled this day, by order of Colonel ALEXANDER BEATSON, Governor and Commander-in-Chief, &c. &c.

PRESIDENT,
Major J. A. WRIGHT, St. Helena regiment.

MEMBERS,
Captain A. BRAID, artillery.
Captain T. J. B. COLE, ditto.
Captain W. Knipe, St. Helena regiment.
Lieutenant F. SEALE, ditto.
Lieutenant H. BROADWAY, artillery.
Lieutenant J. TORBETT, St. Helena regiment.

The Court having been duly sworn, proceeded with the following trial:—

CHARGE *Patrick Lassells*, serjeant in the artillery, confined by order of the Lieutenant-Governor, for unsoldier-like conduct, in not getting ready the field artillery as speedily as possible, when directed by him so to do; and causing unnecessary delay in the requisite preparations for repelling a party of mutineers on the night of the 23d instant.

C. R. G. HODSON,
Town Major.

30th December, 1811.

To which the prisoner pleads *Not Guilty*.

PROSECUTION. *Lieutenant-Colonel E. S. Broughton* (the Lieutenant-Governor), being sworn, deposeth as follows:—

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On the night of the 23d instant, about ten o'clock, I sent for the prisoner, Serjeant Lassells; but as he did not come for some time, I went towards the shed, and met him about half way. I asked him if he was acquainted with the disturbances in the fort: he said, he had just come from the fort, and that he had overheard the conversation of a number of the soldiers assembled in different parties, in the streets; from which he understood they intended to attack Deadwood shed on Wednesday night; and that he was *certain* there would be no attack on Monday night. I replied, it was better to be prepared, and to have every thing ready. We proceeded to the shed, where I found Mr. Hall, the conductor, with the guard paraded. I asked the men if they would stand by me in case of an attack: as I expected the mutineers *that* night: they answered, "they would to a man." The guns, four in number, were then ordered out as quickly as possible. The first two were soon got ready, and sent to Deadwood, under the command of Serjeant Tunstall, to cover the road leading from Banks's: and, notwithstanding my repeatedly urging the prisoner to make haste, there was great delay, both in preparing the other two guns, and in getting out the ammunition: the prisoner repeatedly saying, "that he had no apprehension of the mutineers making an attack at that time; and that he was *positive* it would not then take place." He certainly appeared to me to be somewhat intoxicated, and seemed stupid and confused.

The prisoner has been in command of the guard at Deadwood shed two years and eight months, and during that time I have had but one occasion to find fault with him: for, prior to the night of the 23d, he had conducted himself with the greatest propriety.

Q. *From the Judge Advocate to Colonel B.* — What time, do

you think, elapsed between getting out the first two guns, and getting ready the others?

A. I think it might have been half an hour; and by the time they were equipped, four or five men of the working party, from Long Wood, joined, to assist in dragging them up the hill.

Q. *From the Court.*—Did the prisoner seem inclined to *prevent* the getting of the guns ready; or was he *active* in getting them ready, after you directed him?

A. He was not active; he did not move with that promptitude which I should have expected; and the articles that were required for equipping the field-pieces, seemed out of the way, or at least not at hand. But Mr. Hall, the conductor, can better explain the delay, as I was on the outside of the shed.

Q. How many men had the prisoner with him before the four or five men joined?

A. The whole guard, including the serjeants, consisted of sixteen men; six of whom, as already mentioned, were detached with Serjeant Tunstall: the remainder were, I think, with the prisoner.

Mr. William Hall (Conductor), being sworn, gave the following statement:—

Betwixt eight and nine o'clock on Monday night, the 23d instant, the prisoner came to my quarters, at the Hutt's gate, and told me, "he had something very particular to say; and that he would not say too much at present." I asked him what he meant; he said, "he was doubtful of there being a disturbance soon in the garrison." I asked him what made him think so? he said, "he had heard all about it, but would not say too much at present." He then told me, "that there was a man laying outside, and making use of mutinous expressions." I asked him who he was; and why he did not take hold of him? he said, "it

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was Jewitt, formerly a corporal of artillery, but he did not think it worth his while to trouble himself with him." I asked him how far he was away? he said, "just outside;" and immediately after he said, "he was on the Alarm-house road." I asked him if he was half way to the Alarm-house? he then said, "just under it; that if I would go a little way on the road, I should hear him; for he was making a great noise." I told him, I did not think there was any person on the road: it was certainly a falsehood. As he was intoxicated, I said I would go with him to his post at Deadwood shed; which I did. On the road, at one time he told me the disturbance would happen on Christmas night; and at another, he told me it would happen the night after Christmas. I saw him safe to his room; the guard peaceable and quiet, and the sentinel on his post; I then returned to my quarters. Immediately I got home, the general alarm fired, and I returned to the Lieutenant-Governor for orders, agreeably to the directions he had given me about half an hour before the prisoner came to my quarters. I met the Lieutenant-Governor, with the prisoner, coming to the shed, and the Colonel desired me to go and take charge. I paraded the men; the Colonel asked them, if they had any complaint to make to him? they said none: they would stand by him if any disturbance took place. The prisoner assured the Colonel there was no danger, and suggested that the men should go into their barracks, and take off their side-arms, saying there was no occasion for them: and further observed to the Lieutenant-Governor, that he might go to bed, and rest as quiet and safe as ever he had done in his life. I ordered, however, that the men should not go into the barracks, nor take off their side-arms; but to come and get out the guns, agreeably to the Lieutenant-Governor's directions. The men obeyed me, and Serjeant Lasells said, "there was no occa-

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sion for us to trouble ourselves: he was *positive* there was no danger." The prisoner also directed the men to do every thing contrary to what I ordered, which occasioned much confusion. Colonel Broughton then ordered him to desist, and to allow the men to obey his orders. In consequence of the confusion caused by the prisoner, we were not prepared to receive the mutinous party; who came upon us so suddenly, that they took the gun the Colonel had command of, just as it was loading. I gave Colonel Broughton two spikes to have the gun spiked, in case it should fall into the mutineers' hands; and when they came up to Colonel Broughton, as they shewed no violence, the Colonel slipped the two spikes into the prisoner's hands; yet he made no use of them: but suffered the gun, unspiked, to fall into their hands.

Q. *From the Judge Advocate.*—What time do you suppose elapsed between the guns being ordered to be drawn out, and their being ready?

A. It was about an hour and a quarter from the time of the alarm to the gun falling into the mutineers' hands. If it had not been for the confusion that the prisoner put us all into, we might have been ready with the guns half an hour before the mutineers came up.

Q. How many men were there to take out the guns?

A. Sixteen; but the whole, except two or three, went with the first two guns, under Serjeant Tunstall, to Deadwood. I had to get those men back again (leaving Serjeant Tunstall with three men) to man the other two guns, and to take them on the road towards the Telegraph, to meet the mutineers—but several men joined me from Long Wood, when I was leaving the shed.

Q. Notwithstanding these necessary delays, do you say that you could have been ready with the guns, at their proper posts,

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half an hour before the mutineers came up, if the prisoner had not caused *unnecessary* delays?

A. Yes.

Serjeant William Smith (of the artillery), sworn, gave the following statement:—

On Monday night, about nine o'clock, the prisoner came home from the Fort, to the shed (where he commanded), and Mr. Hall with him. The prisoner appeared intoxicated, and wished to return back to the Hutt's with Mr. Hall, who desired him to remain at his own post. I did not see him afterwards, until he came to the shed with the Lieutenant-Governor: he then ordered the guard to fall in, which they did, with side-arms—the prisoner seemed very angry at their doing so, and asked them the reason of their falling in *with arms*, and desired them to go in and take them off—Mr. Hall, however, stopped them. It appeared that the Lieutenant-Governor had something to say to the men; but he was greatly interrupted by the prisoner. Mr. Hall went to the Lieutenant-Governor, and told him, it was much better to get the guns out, and have them ready, as quick as possible: the whole of the guard immediately set about it. I was then ordered by the Lieutenant-Governor to go for the working-men, and cannot say what occurred until I returned; but by this time, Serjeant Tunstall had gone with two 3-pounders to Deadwood. I was ordered to take another towards the Telegraph; and as soon as I got a little way from the shed, I found there was no ammunition for the gun, which I reported to the Lieutenant-Governor, who desired me to send back for some, which I did; before the man could return with it, the gun was surrounded, and taken; as likewise the Lieutenant-Governor, and we were all brought back prisoners to the gun shed.

Q. *From the Judge Advocate.* Had the general alarm fired when the guard were ordered to fall in?

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A. Yes—some time.

The prosecution being closed, the prisoner is called on for his defence.

DEFENCE. The prisoner in his defence says:—

On the 23d instant, I was in the town, and some how or other, got so much disguised in liquor, that I cannot recollect what I said or did that night. When informed of my conduct the next day, I was, as I am now, extremely sorry for what I had done. I beg the mercy of the Court. I have been in the garrison five years and four months, and have never been reported for any misconduct. For two years and eight months I have commanded at Deadwood Shed, and have met with every indulgence from the Lieutenant-Governor, and have always been ready to execute his orders with alacrity:—his goodness to me makes me more sorry that I should have been so unfortunate as to be intoxicated at a time when my services were most wanted.

SENTENCE. The Court having considered the evidence, are of opinion that the prisoner, Serjeant Lassells, is guilty of the crime with which he is charged, in breach of the Articles of War; do therefore sentence, that he shall be reduced to the pay and duty of a matross, and shall receive five hundred lashes in the usual way.

(Signed) J. A. WRIGHT,
Major and President.

C. R. G. HODSON.
Judge Advocate.

Approved.
ALEX. BEATSON.
E. S. BROUGHTON.
W. W. DOVETON.
ROBERT LEECH.

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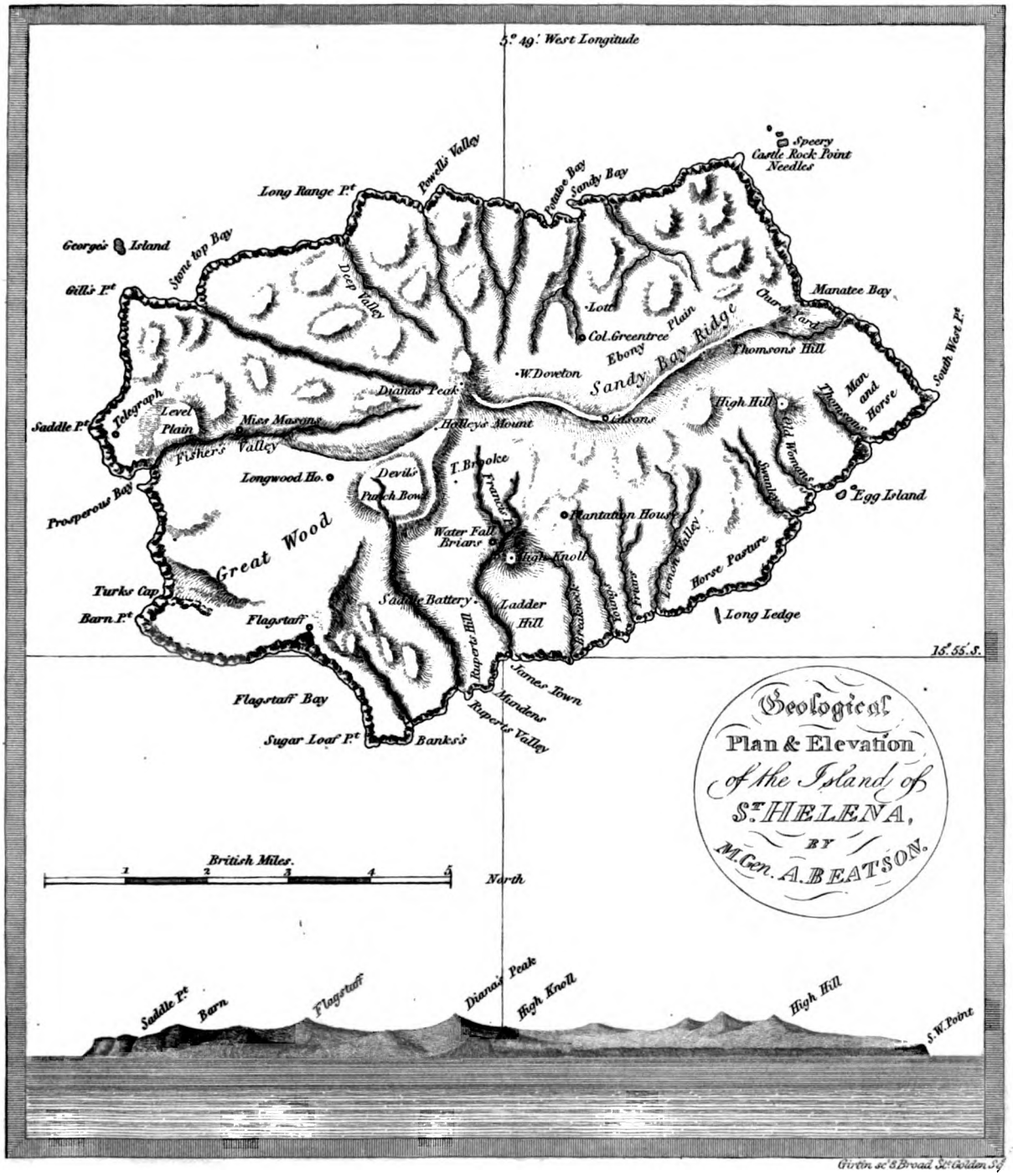

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APPENDIX.

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APPENDIX.

An ALPHABETICAL LIST *of* PLANTS,* *seen by Dr.* ROXBURGH *growing on the Island of St. Helena, in* 1813-14.

I. means indigenous; E. exotic. Several of the most conspicuous of the undetermined species are briefly described; and Doctor Roxburgh's names are distinguished by the letter R.

E. ABRUS *precatorius Willd.* 3. p. 911. 1025.

I. ACALYPHA *rubra.* R. Red acalypha, or string-tree of the islanders.

Arboreous. Peduncles axillary and between the leaves: one or more female flowers near the base, the rest a long, pendulous filiform, glomerate male spike: involucres cuculate, intire. Leaves petioled, ovate, crenate, 3-nerved.

A beautiful small tree, a native of elevated parts of the south face of Diana's peak, and called *string-tree* by the natives on account of its numerous beautiful red male spikes, which hang in great profusion from every twig. Ultimate *branches* tubercled with the scars of the fallen leaves; above, where the leaves remain coloured red and smooth: the *petioles*, *nerves*, and *veins* are also red and smooth.

E. ACER *Pseudo-Platanus. Willd.* 4, p. 983. Common maple or sycamore tree.

E. ACHYRANTHES *aspera. Willd.* 1. p. 1191. A weed in gardens.

* This is by no means given as a complete catalogue of the vegetable kingdom on the Island. Doctor Roxburgh's bad state of health during his residence there, from the 7th June, 1813, to the 1st March, 1814, did not admit of his undertaking such a task.

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I Acrostichum *bifurcatum. Willd.* 5, p. 114.

A very delicate, small, beautiful smooth species, growing in crowded tufts to about the height of 6 inches in the moist shaded fissures of the rocks about Diana's peak, &c.

I. Acrostichum *lanceolatum.* R.

Stipes ramentaceous: fronds simple, lanceolar, strongly veined, intire: the fertile longer stiped. Fructifications occupy the whole of the inferior surface.

E. Aeschynomene *Sesban*, and *grandiflora.*
E. Agapanthus *umbellatus. Willd.* 2, p. 47.
E. Agave *tuberosa Linn. Yucca superba.* R.
E. —— *lurida Linn.* used for fences.
I. Agrostis *purpurascens. Willd.* 1. p. 375. Purple bent grass.

Indigenous on the hills of St. Helena, where it grows to be from 2 to 3 feet high, perfectly erect, very naked of *leaves*, as they are not only few in number but short and very slender. The *inflorescence* a long slender *panicle* composed of numerous, small, simple or compound appressed *branches*, crowded with numerous, short-pedicelled, smooth *flowers. Calycine* valves unequal, scarce half the length of the *corol*, which has its two valves nearly equal and rather acute; but nothing like an awn either here or to the calyx.

Agrostis *lenta Linn.* Forked bent-grass.
Agrostis *stellata*, see *Panicum dactylon*, and compare with *Agrostis linearis, Retz. Obs.* 4. p. 19. Linear-leaved agrostis, or wire-grass.
E. Aleurites *triloba. Willd.* 4. 590. Three-lobed Aleurites.
E. Allium *cepa, Porum, ascalonicum*, and of *sativum* 2 varieties. *Onion, leek, shallot*, and *garlick.*
E. Aloe *perfoliata*, two or three varieties in gardens.
E. —— *spicata* and 3 or 4 undetermined species, all exotics.
I. Alopecurus *paniculatus*, R.
E. Althæa *rosea. Willd.* 3. 778. Holly-hock.

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E. Amaranthus *Blitum. Willd.* 4. 387. A weed in gardens.
E. ——— *caudatus* and *tricolor*, cultivated for ornament.
E. Amaryllis *Belladonna. Willd.* 2. 54. Belladonna-lily.
E. ——— *formosissima. Willd.* 2. 62. Jacobea-lily.
E. Amygdalus *Persica. Willd.* 2. 982. Peach, 2 or 3 varieties, and almond; but the latter does not succeed here: whereas the peaches grow luxuriantly, and are productive.
E. Anagallis *arvensis*, three varieties, blue red and white.
E. Andropogon *Schoenanthus*, or lemon-grass; cultivated in gardens.
E. Annona *muricata*. In Major Hudson's garden only.
E. ——— *Cherimoya*. In the same garden.
E. ——— *squamosa*.
E. ——— *reticulata*. } In but few gardens, and scarce. { Custard apple. Bullock's heart.
E. Angelica *bracteata*. R. Bracted-Angelica.

Leaves pinnate; floral ternate; leaflets petiol-clasping subcordate, 3-7-nerved, finely laciniate-serrate.

Angelica the vernacular name. It grows to be a stout, erect perennial, of 8-12 feet in height, with columnar, fistulous, smooth, bright green *stem* and *branches*. *Leaves* sparse, in some parts crowded, unequally pinnate, those next the umbels from quinate-palmate to 3-lobed: *leaflets* of the inferior larger leaves from 4 to 12 pair, opposite, closely embracing the smooth, green columnar petiole, cordate, nerved, smooth, finely laciniate-serrate; each serrature ends in a green bristle: at the base of each petiole a pair of large, simple, or compound, suborbicular *bractes*, and generally a single one between the leaflets, and all subulate-serrate, like them. *Umbels* terminal, numerous, compound, subglobular, many rayed. *Involucre* and *involucells* of 6-10 broad-lanceolate leaflets each. *Flowers* numerous, small, white but turn pink by age. *Petals* subequal, oval and oblong incurved. *Stamina* unequal: *anthers* purple. *Styles* short, erect. *Receptacles* naked.

E. Antholyza *æthiopica. Linn.* Flag-leaved antholyza.
E. Anthoxanthum *odoratum. Willd.* 1. 150. Sweet-scented vernal-grass.

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E. Apium *petroselinum*, *Willd.* 1. 1475. Parsley, and *graveolens*, or smallage.

E. Argemone *mexicana*, the most common weed on the island.

E. Artemesia *absinthium*, wormwood.

E. Arum *Colocasia*. *Willd.* 4, 481. *St. Helena Yam;* of this there are several varieties, but the white is the sort cultivated.

E. Asclepias *fruticosa*. *Willd.* 1. 1271. Shrubby Asclepias.

E. ——— *curassavica*. *Willd.* 1. 1266. Bastard Ipecacuanha.

I. Aspidium *riparium*. *Willd.* 5. p. 250.

Stipes villous, flat above. Fronds oblong, bipinnatified: pinnæ linear: segments linguiform, or falcate, and deeply divided. Spots in one crowded row a little removed from the margin: involucres reniform.

Found plenty over the south side of the mountains immediately above Major Seal's in *Sandy Bay*, where it grows in tufts to be from 2 to 4 feet high.

I. Aspidium *pulchrum*. *Willd.* 5. p. 253?

Base of the stipes and tuberous like runners chaffy, the rest brown and smooth. Fronds ovate-oblong, firm, subbipinnate: pinnæ opposite, generally pinnatifid: segments oblong, obtuse, subcrenate. Spots generally one, rarely 2 or 3 to each segment of the pinnæ: involucres reniform.

A small (6-12 inch) plant of a hard texture, but not glossy, with the stipes about as long as the fronds: a native of *Diana's Peak*.

I. Aspidium *vestitum*. *Willd.* 5. p. 261.

Stipes and divisions amply clothed with large brown soft scales. Fronds oblong, bipinnate: leaflets linguiform, obtuse, crenate.

Grows on *Diana's Peak* to be about two feet high.

I. Aspidium *Capense*. *Willd.* 5. p. 267.

Stipes green and channelled. Fronds ovate, smooth, bipinnate: pinnæ opposite, apices ensiform and sharply serrate; pinnulæ from serrate

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to pinnatifid, with obtuse dentate apices. Spots in two rows a little removed from the nerve: involucres reniform.

A native of *Diana's Peak*, where it grows to be from 20 to 30 inches high: is of a soft delicate texture: the spots numerous and very large.

I. ASPIDIUM *coriaceum. Willd.* 5. p. 268.

Stipes as long as the oppositely bipinnate, ovate fronds. Leaflets linguiform, crenate-serrate, and pinnatifed. Spots in one line half way between the nerve and margin; involucres reniform.

Is also a native of the south face of *Sandy Bay* range of mountains, where it rises to the height of about 2 feet, and generally amongst bushes. It differs from *A. capense* in little else than the shape of the apices of the pinnæ, and the single row of spots, whereas in that species it is double.

I. ASPLENIUM *tenellum*. R.

Stipes polished. Fronds linear recurved, apices rooting, alternately pinnate: leaflets numerous, obliquely linguiform, obtuse crenate, anterior side of the base enlarged, posterior attenuate.

A pretty, small (6-8 inches) species, with the habit of *Adiantum caudatum*, found indigenous on the tops of the high mountains in the centre of the Island.

I. ASPLENIUM *falcatum. Brown's Prodrom.* p. 150.

Stipes as long as the lanceolate, alternately-pinnate, firm, smooth fronds, 3-sided, 3-grooved, pretty smooth and black. Leaflets short-petioled, falcate-lanceolate, lobate; lobes and fine ensiform apices serrate.

A most beautiful species, growing in small tufts on the top of Sandy Bay ridge, to be about 2 feet high. Compare with *A. falcatum. Willd.* 5. 325: it agrees pretty well with his definition.

I. ASPLENIUM *præmorsum. Willd.* 5. p. 339.

I. ASPLENIUM *filamentosum*. R.

Stipes longer than the thin, ovate, alternately-tripinnatifed frond,

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channelled, base clothed with long, black chaffy scales: pinnæ remote; leaflets pinnatifed; segments short-linguiform, serrulate, obtuse.

A stout species of from 2 to 6 feet high; a native of the south face of *Diana's Peak*.

I. Aster *glutinosus*. R. (compare with *hirtus*. *Willd*. 3. 2016.)

Shrubby, tender parts woolly. Leaves from cuneate to spatulate, apices rounded, and grossly serrate, fleshy, rugose with very prominent veins underneath. Peduncles terminal, ultimately axillary subsolitary, length of, or longer than the leaves, one-flowered.

A native of the most naked, barren rocks on the south side of the Island, where it grows to be a middling sized shrub. The clammy *leaves* are fragrant. *Bractes* scattered over the long clammy peduncles, and of a long-clavate shape. The *flowers* are large, pure white. Goats are said to be fond of it, and while browsing on it, the clammy exudation thereof is collected on their beards. (See history of *Mastich*.)

E. Atriplex *triangularis*. *Willd*. 4. 963. Triangular Atriplex.
E. Atropa *physaloides*. *Linn*. Blue-flowered Atropa.

E. Bambusa *arundinacea*. *Willd*. 2. 245. Common Bamboo.
E. Barringtonia *speciosa*. *Willd*. 3. 345. Laurel-leaved Barringtonia.

Beatsonia, R. *Pentandria Monogynia*.

Generic Character. *Calyx* 5-toothed. *Corol* 5-petalled, campanulate. *Germ* superior, 1-celled, containing many ovula attached to the two opposite sides of the cell. *Style* bifid. Stigmas globular. *Capsule* 1-celled, 2-valved. *Seeds* a few.

Named in honour of Colonel Alexander Beatson, Governor of *St. Helena*.

I. Beatsonia *portulacifolia*. R.

St. Helena Tea the vernacular name on that island, where it grows on the naked rocky mountains and hills on the south side, to be a very ramous shrub, of a middling size. *Trunk* short, soon dividing into numerous

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branches, crowded with innumerable, small, delicate, villous, subarticulate, brittle ramuli. *Bark* of the old ligneous parts, dark brown and pretty smooth. *Leaves* opposite subrotund, fleshy, convex and smooth above, hollow underneath: size of a large pin's head, &c., almost exactly as in *Portulaca quadrifida*, even to the quatern floral-leaves. *Petioles* short, stem-clasping. *Flowers* terminal, solitary, sessile in the bosom of the 4 floral leaves. *Calyx* subcylindric, 5-grooved, 5-toothed, withering. *Corol* 5-petalled, campanulate, large for the size of the foliage, pure white, and like the calyx, withering. *Filaments* 5, nearly as long as the petals, and with them alternately inserted into the receptacle; at the base broad, and seem united there, but are not. *Anthers* yellow. *Germ* superior, ovate, smooth, one-celled, and contains several ovula attached to the lower half of two opposite, parietal receptacles. *Style* length of the stamina, apex-bifid. *Stigmas* globular. *Capsule* ovate, hid in the withered calyx and corol, 1-celled, 2-valved, opening from the apex. *Seeds* few, attached as in the germ.

E. Beta *vulgaris* and *sicla*. *Willd.* 1. 1303. Red and green Beet and *Mangel Wurzel* belong to the first, and the common white Beet to the second.

I. Bidens *arborea*. R.

Arboreous. Leaves opposite, short-petioled, oblong-ventricose, serrate. Panicles terminal, brachiate, corymbose.

White-wood-cabbage tree the vernacular name on St. Helena, where it grows on the south face of *Diana's Peak* to be a pretty large *tree*, with straight upright *trunk*, and dark-coloured, pretty smooth *bark*; the *young shoots* are rough with much short brown *hair*. *Leaves* from oval to oblong, very equally gland serrate, smooth above, somewhat villous underneath. *Stipules* none. *Panicles* terminal while young in flower, large, subcorymbose, pretty well crowded with opposite, hairy ramifications and their subdivisions. *Flowers* conical. *Calyx* scarce calycled, composed of a very few leaflets, and most of them embrace a floret like the scales of the receptacle. *Seeds* 4-sided, strigose, particularly the 4 angles, each crowned

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with two, very short, scabrous *aristæ*, which are about as long as the tubes of the florets.

I. Boerhaavia *repanda. Willd.* 1. 22. is common amongst the rocks in *James's Valley*, &c.
E. Borago *zeylanica. Linn.* Ceylon Borage.
E. Brassica *oleracea. Willd.* The common useful species and varieties of cabbage.
E. Browallia *elata. Willd.* 3. 339.
E. Buxus *sempervirens. Willd.* 3. 337. Common Box-tree.

E. Cactus *Opuntia. Linn.* Common Cactus.
E. ——— *coccinellifera. Linn.* Cochineal fig.
E. ——— *chinensis.* R. China Cactus.
E. Calla *æthiopica. Willd.* 2. 289. Æthiopic Calla.
E. Camellia *japonica*; two or three varieties.
E. Canna *indica*, three or four varieties. See *Willd.* 1. 8.
E. Cannabis *sativa. Willd.* 4. 763. Common hemp.
E. Calendula *Tragus. Linn.*
E. ——— *officinalis.* Common Marygold.
E. Capsicum *cerasiforme. Linn.* Cherry-pepper.
E. ——— *grossum. Linn.* Bell-pepper.
E. ——— *frutescens. Linn.* Shrubby pepper.
I. Carex *pedunculata. Willd.* 4. 222.

Spikes androgynous, pedicelled, erect, cylindric, alternate on a terminal rachis: male flowers (when present) under the female: scales striated, apices serrate-dentate: corol striated. Style trifid, seed triangularly obovate.

A native of the south face of *Diana's Peak*, under the shade of trees, where kept moist by the fogs which rest on the Peak. It grows in small tufts to about the height of three feet when in flower. Radical *leaves* numerous, very long striated, keeled, hard and smooth: cauline similar but smaller: *culms* 3-sided, smooth, leafy.

E. Cassia *microphylla. Willd.* 2. 529.

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E. Cassia *aurea*. R.
E. —— *aluta*. *Willd*. 2. 523.
E. —— *esculenta*. R.
E. —— *Sophera*. *Willd*. 2. 525.
E. Castanea *vesca*. *Willd*. 4. 460. Chesnut.
E. Celsia *Arcturus*. *Willd*. 3. 280.
E. Centaurea *Moschata*. *Willd*. 3. 2278. Sweet Sultan.
I. Cheilanthes *tenuifolia*. *Brown's Prodromus*, 163.

Found on *Diana's Peak*, where it grows in large masses to be from 6 to 18 inches high, with long, slender, crooked, dark-coloured (brownish black,) *stipe* and divisions. Compare with *Adiantum assimile* of the same work.

E. Cheiranthus *Cheiri*. *Willd*. 3. 516. Wall-flower.
E. —— *incanus*. *Willd*. 3. 520. Gilly-flower, or Stocks, several varieties.
E. —— *odoratissimus*. *Willd*. 3. 524. Persian Stock.
E. Chenopodium *ambrosioides*. *Linn*. Mexican Chenopodium.
E. —— *album* and *viride*. *Linn*. White and green Chenopodium.
E. Cichorium *Intybus*. *Willd*. 3. 1628. Wild Succory and *Endiva*, Garden Succory, or Endive.
E. Cicer *arietinum*. *Willd*. 3. 1113. Chick-pea.
E. Citrus. *Willd*. 3. 1436, including the lemon, citron, and orange, with varieties.
E. Clerodendrum *inerme*. *Gært*. *Volkameria*. *Willd*. 3. 383.
E. Clitoria *ternatea*. *Linn*.
E. Cluytia *pulchella*. *Willd*. 4. 381. A Cape flowering shrub.
E. Cocos *nucifera*. *Willd*. 4. 400. *Coco-nut palm*: very few of them, and they do not thrive.
E. Coffea *arabica*. In Mr. Alexander's garden in *Sandy Bay*, are some of the finest coffee trees I ever saw, and at the same time (February) in every stage from the blossom to the ripe berry.
E. Conchium *gibbosum* of Dr. E. Smith, is Hakea gibbosa of Brown.

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I. Conyza *gummifera*. R.

Arboreous. Leaves sparse, approximate, subsessile but not decurrent, from lanceolar to cuneate-oblong, subserrate, soft, rugose and more or less woolly underneath. Peduncles axillary, solitary, drooping, one-flowered: flowers globular.

Gum-wood-tree of the islanders: it grows on the more elevated land over the interior parts, to be a *tree* of considerable size, with short crooked *trunk* and still more crooked spreading *branches* and ditrichotomous *branchlets*. *Bark* of the trunk and large branches a deeper or lighter brown, and smooth except for the numerous scars of the fallen leaves. *Leaves* crowded about the ends of the branchlets, often broad-lanceolar particularly in old trees; while young, gummy and more hoary: length, 2-4 inches, by $\frac{1}{4}$ of an inch to one and a half broad.

I. Conyza *robusta*. R.

Leaves subsessile (not decurrent,) lanceolar, crenate-dentate, rugose. Peduncles axillary, solitary, length of the leaves, one-flowered.

Bastard-gum tree the vernacular name on St. Helena, where it grows to be a tree very similar to the last, and possessed of nearly the same qualities. The dwarfish, very crooked antique habit of those trees, makes them very conspicuous. The *bark* on the old parts is very thick and deeply cracked; the *branchlets* generally dichotomous, and marked with the scars of the fallen leaves. The *leaves* while young hoary with soft pubescence; the *flowers* few but large and white.

Conyza *rugosa*. *Aiton's Kew*. 3. 184. See *Solidago cuneifolia*.

I. Convolvulus *brasiliensis*. *Willd*. 1. 877. and another undetermined indigenous species.

E. ———— *purpureus*. *Willd*. 1. 352. Convolvulus major.

E. ———— *Batatas*. *Willd*. 1. 853. *Sweet Potatoe*, the red and white varieties.

E. Cookia *punctata*. *Willd*. 2, 558. Wampee of the Chinese.

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E. Cordia *macrophylla*. R. A large tree from *Bengal*.
E. ——— *campanulata*. R. A small tree from the Moluccas and *South Sea Islands*.
Cotula *coronopifolia*. *Willd*. 3. 2167. Pagoda plant of the islanders.
E. Crassula *cultrata*. *Willd*. 1. 1552. Sharp-leaved Crassula.
E. ——— *obliqua*. *Willd*. 1. 1553. Oblique-leaved.
E. Crinum *toxicarium*. R. and two or three other species which were not seen in blossom by Dr. Roxburgh.
E. Crotalaria *retusa*. *Linn*. Retuse-leaved Crotolaria.
E. ——— *laburnifolia*. *Linn* Laburnum-leaved.
E. ——— *incanescens*. *Linn*. Hoary.
E. Croton *sebiferum*. *Linn*. Tallow-tree of China.
E. Cucurbita *lagenaria*. *Willd*. 4. 616. Bottle-gourd.
E. Cunonia *capensis*. *Willd*. 2. 634.
E. Curtisia *faginea*. *Willd*. 1. 687. Hassagay-tree.
E. Cupressus *sempervirens*. Two varieties of the Cypress-tree.
E. ——— *lusitanica*. *Lamb. Pin. t.* 42. Goa Cypress-tree.
E. Cycas *revoluta*. *Lin* . Revolute-leaved Cycas.
E. Cynara *Scolymus*. *Willd*. 3. 1691. Artichoke.
E. Cyperus *rotundus*. A very common weed in gardens.
E. ——— *tenuiflorus*.
E. ——— *Pepo* and *citrullus Linn* Pumpkin and Water-melon.
E. Cucumis *sativus*. *Linn* Garden-cucumber.
E. Costus *speciosus*. *Willd*. 1. 10.

E. Dalbergia *Sissoo*. R. } From *Bengal;* where they grow to large
E. ——— *frondosa*. R. } timber trees.
E. Daphne *odora*. *Hort. Kew*. Sweet-scented Daphne, from China.
E. Datura *fastuosa*. *Willd*. 1. 1003.
E. ——— *Metel*. *Willd*. 1009.
E. ——— *Tatula*. *Willd*. 1. 1008.
E. Daucus *Carota*. *Linn*. Common Carrot.
E. Dracæna *cernua*. *Willd*. 2, 157.
E. Dianthus *barbatus*. *Linn*. Sweet William.

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E. Dianthus *chinensis. Linn.* China Pink.
E. ——— *Caryophyllus. Linn.* Clove.
I. Dicksonia *arborescens. Willd.* 5. 485.

Stipes, rachis and subdivisions compressed, and somewhat woolly, but not scabrous. Fronds ovate-oblong, hard, glossy above, sub-oppositely tripinnate; ultimate segments from oval to oblong, and crenate-serrate. Spots on the margin, until they open transversely-oval, after round.

Grows on the tops of the highest mountains; such as *Diana's Peak*. *Trunk* single, straight; general height when full grown, 20, or more feet, and of various thickness up to that of a man's body: covered with the bases of the decayed stipes, mosses and parasites of various kinds; at the apex clothed with long, soft, tawny-brown wool, like that of which the finest shawls are made; when this woolly substance is removed, the parts over which it extended are found to be scabrous. Fronds (including the stipes) from 4 to 10 feet long.

E. Dioscorea *alata. Linn.* Winged Yam.
E. ——— *aculeata.* R. Thorny Yam.
} Here they do not thrive to be of the smallest use. See *Arum*.

E. Diospyrus *Kauki. Linn.* Japan Diospyros, fruit large and edible.
I. Dombeya *Erythroxylon. Willd.* 3. 725. *Pentapetes Erythroxylon. Hort. Kew. 1st edit.* 2. 438. *Melhania, second edition,* 4. 146. *of the same work.*

Arboreous. Leaves ovate-cordate, crenulate, acuminate, smooth above, reticulate underneath, while young hoary, obscurely 3-5-nerved. Peduncles axillary, solitary, 2-3-flowered: flowers pentandrous.

Red-wood-tree the vernacular name on *St. Helena*, where it is indigenous on moderately high hills, where, if the soil is suitable, it grows rapidly with a straight *trunk* to be a middling sized tree of great beauty. *Bark* dark brown, even and pretty smooth.

Branches numerous, spreading, tender twigs hoary. *Stipules* subulate. *Peduncles* about as long as the petioles. *Flowers* larger than in the following (*D. Melanoxylon*) colour the same and also changeable. *Nectarial* filaments flesh-coloured. *Style* twice the length of the stamina. *Capsules*

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oblong, pointed, very hairy, and somewhat shorter than the permanent calyx; cells 3-5-seeded. This tree furnishes the islanders with an hard, close-grained mahogany-coloured, durable wood.

I. DOMBEYA *melanoxylon*. R. *Melhania melanoxylon. Hort. Kew. 2d. edit.* 4. 146.

Leaves ovate-cordate, long-petioled subentire, firm, smooth above, ferruginously hoary underneath, obscurely 3-nerved. Peduncles axillary solitary, 1-2-flowered: flowers pentandrous. Capsules ovate, obtuse, greatly shorter than the permanent calyx; cells 2-3-seeded.

Ebony the vernacular name.

Is a native of the barren rocks near the sea, and not far from *Sandy Bay*, on the south side of the island, I saw it in two gardens only, where it had in many years grown to the height of only 2-3 feet, with many longer branches spreading flat on the ground, well decorated with abundance of foliage and large beautiful flowers. *Bark* of the old ligneous parts rather rough and of a dark olive-black colour; of the young shoots hoary with stellate pubescence, each starlet thereof has a ferruginous centre. *Petioles*, under side of the leaves, peduncles, bractes and calyx have the same covering. The *leaves* are greatly smaller than in *D. Erythróxylon*, but more entire. *Stipules* subulate. *Peduncles* length of the leaves, 1-2-flowered. *Flowers* large, campanulate; when they first expand white, becoming pink or rosy by age. *Bractes* tern, ovate, lanceolate, pressing the base of the calyx. *Stamina* 5, shorter than the 5 dark purple clavate, nectarial filaments.

In some parts on the south side of the island near the sea, numbers of the dry trunks were found in former days: now few remain; the greater part having been carried away for fuel: those little trunks are but a few feet in length, generally very crooked, and run from 1 to 3 or 4 feet in circumference near the root; those parts of the roots and branches which remain spread nearly horizontal; the exterior surface is pretty even, and of a dark lead colour, having been exposed to the weather, for, probably, some hundred years; within it is nearly as black as common ebony, and as

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close grained, hard and heavy; in short it is so very like ebony as to have procured it that name from the islanders.

The few trees now found alive in their native soil and situation are from 10 to 15 feet high, their trunks crooked and about as thick as a man's thigh; the branches very numerous, spreading, &c. &c., and at this season when the young foliage is expanding, the flower buds are also to be seen, and in this state generally 2 on each peduncle; whereas in the cultivated plants rarely more than one.

E. Eleusine *corocana*. R. *Cynosurus Corocanus. Linn.*
E. ——— *indica. Gært.* Cynosurus. *Linn.*
E. ——— *calycina*. R.
E. Erodium *sempervivum*. R. *Pelargonium Cotyledonis. Willd.* 3. 674.

Shrubby, succulent and extremely tortuous. Umbels long-peduncled decompound. Leaves subcordate, downy, rugose, some lobate-crenate, some peltate.

A native of the barren rocky precipices on the south side of the island, and known by the name *Old father live for ever*. It grows to be a large spreading *shrub*, with innumerable, thick, succulent, extremely crooked *branches*, the apices obtuse, and thence both leaves and umbels spring. *Bark* thick and fleshy, the surface dark brown, and peels off in small fragments. *Leaves* long petioled and soft with down. *Stipules* small, triangular and acute. *Peduncles* terminal, generally single, very long, erect, coloured, and villous; the umbellets numerous, and all the divisions long, coloured, and villous. *Involvcre* scarce any; *involucells* of a few small acute scales. *Flowers* numerous, pure, white, *calyx*, 5-toothed; the rest as in the genus. Every part is to me void of smell.

E. Erythrina *caffra. Willd.* 3. 914. Cape-coral-tree.
E. Euphorbia *rosea. Willd.* 2. 895. French-grass of the islanders.
E. ——— *Peplus. Willd.* 2. 903. Small-spurge.
E. Eugenia *Jambos. Willd.* 2. 959. Rose-apple.
E. Ficus *Carica*. The common Fig: grows freely here, and produces good crops of excellent fruit; but like every thing else in rural economy too much neglected.

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E. Ficus *indica*, or the famous Banyan-tree of India.

E. —— *religiosa*. *Willd.* 4. 1134.

E. —— *terebrata*. *Willd.* 4. 1145. Is the most common tree in James's Valley, where it grows freely, and furnishes excellent fuel; the wood of this species being much firmer than any other species of this genus known to me.

I. Fimbristylis *textilis*. R.

Culms naked, columnar until above the middle, then somewhat compressed. Leaves none. Spikelets numerous in a hard sessile head, 1-2 inches below the subulate grooved apex: flowers 1-3 androgynous: scales boat-shaped, rather obtuse: style 3-fid.

St. Helena thatching rush: is a native of the interior of the island, and in plenty for every purpose: in moist elevated situations, it grows to the height of 3-6 feet, perfectly destitute of leaves and quite straight; about as thick as a crow-quill, of a firm texture, and smooth glossy deep green colour. A good substantial covering of this rush is said to last from 10 to 15 years, and keeps out wet effectually.

E. Fragaria *vesca*. *Willd.* 2. 1090. Strawberries, a few varieties, but little or no care is taken of them, consequently they do not thrive.

E. Fraxinus *chinensis*. R. China Ash, a small slow growing tree.

E. Fumaria *capreolata*. *Willd.* 3. 868. Running Fumitory.

E. Fuchsia *coccinea*. *Willd.* 2. 340. Scarlet *Fuchsia* grows most luxuriantly in *Sandy Bay*.

E. Gardenia *florida*. *Willd.* 1. 1225. Cape Jasmine.

E. —— *Thunbergia*. *Willd.* 1. 1226.

E. —— *radicans*. *Willd.* 1. 1225.

E. Gleditschia *horrida*. *Willd.* 4. 1097. This tree is one of the most stately and most beautiful on the island, but unfortunately there is but a single individual to be seen; it grows in the garden at the Governor's country-house, where it has attained to the height of 50 feet or more; with trunk and coma proportionally large. It has not produced seed, nor have they hitherto been able to multiply this

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charming tree. The large ramous spines are confined to the trunk, and larger branches.

E. GMELINA *asiatica, Willd.* 3. 313. A large thorny shrub, with large drooping yellow flowers.
E. GNAPHALIUM *americanum. Willd.* 3. 1887. Everlasting.
E. GOMPHRENA *globosa. Willd.* 1. 1321. Annual Globe-amaranth.
E. GOSSYPIUM *latifolium. Willd.* 3. 806. Grows freely, and yields a large produce of fine *Cotton.*
E. ——— *barbadense. Willd.* 3. 806. Barbadoes Cotton.
I. GRAMMITIS *marginella. Willd. 5.* p. 139.

E. HIBISCUS *Populneus. Willd.* 3. 209. An useful timber tree of considerable size.
E. ——— *populneoides.* R. A tree similar to the last, but larger.
E. ——— *mutabilis. Willd.* 3. 817. Changeable-flowered.
E. ——— *syriacus. Willd.* 3. 818. Syrian Hibiscus
E. ——— *sabdariffa. Willd.* 3. 821, or West-India sorrel.
E. ——— *cannabinus. Willd.* 3. 822. Hemp Hibiscus.
E. ——— *Abelmoschus. Willd.* 3. 826. Musk Hibiscus.
E. ——— *Trionum. Willd.* 3. 832. Bladder Hibiscus.
E. ——— *diversifolius. Willd.* 3. 820. A tall tree of short duration.
E. ——— *urens. Willd.* 3. 817.
E. ——— *Rosa sinensis. Willd.* 3. 812. China-Rose or Shoe flower.
E. ——— *phœniceus. Willd.* 3. 813.
E. ——— *armatus*, or *Rock-rose* of the islanders.
E. HÆMANTHUS. From the *Cape of Good Hope;* species uncertain.
I. HEDYOTIS *arborea.* R. *Dog-wood* of the islanders.

Arboreous. Leaves opposite, short-petioled, oblong, acuminate entire, glossy, recurved: stipulary sheath cylindric, with one, or three unequal denticuli on each side. Corymbs terminal, brachiate, subglobular. Capsules globular.

A small tree, a native of the dark forests which decorate the misty alpine tops of the most lofty mountains in *St. Helena.*

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E. Helianthus *annuus. Willd.* 3. 2287. Annual Sun-flower.
E. Heliotropium *indicum. Willd.* 1. 740. A weed in gardens.
E. Hemerocallis *fulva. Willd.* 2. 197. Day Lily.
E. Hordeum *hexastichon. Willd.* 1. 472. Spring Barley.
E. ——— *distichon. Willd.* 1. 473. Common Barley.
E. Hyderocotyle *asiatica. Willd.* 1. 1362. Penny-wort.
E. Hydrangea *hortensis. Willd.* 2. 633. China Guelder-rose.
E. Hymenophyllum *capillaceum.* R.

Parasitic; surculi and stipes capillary, the former creeping. Fronds lanceolate bipinnatifid; segments linear, margins entire. Involucres terminal, solitary, more rarely paired, subrotund.

A most beautiful, exquisitely delicate, small creeping parasite, found mixed with moss on the trunks of trees over *Diana's Peak.*

E. Hypericum *monogynum. Willd.* 3. 1442. Chinese St. John's Wort.
E. Jasminum *officinale* and *odoratissimum. Willd.* 1. 40. Common and yellow *Jessamine.*
E. Impatiens *Balsamina. Willd.* 1. 1175. Garden Balsam.
E. Indigofera *tinctoria. Willd.* 3. 1237. Common Indigo-plant.
E. Ipomoea *quamoclit. Willd.* 1. 879. and *grandiflora.* R.
E. Justicia *betonica. Willd.* 1. 96. Betony-leaved Justicia.
E. Ixia. Several species from the Cape, which thrive well in elevated gardens.

Kyllinga *monocephala. Willd.* 1. 256.
——— *sumatrensis. Willd.* 1. 258.

E. Lactuca *sativa. Willd.* 3. 1523. Lettuce, some few varieties.
E. Lamium *purpureum. Willd.* 3. 88. Red Dead-nettle.
E. Laurus *Persea. Willd.* 2. 480. *Avocado Pear.* Saw only one tree on the whole island, and no care taken of it: indeed no person knew what it was. It blossoms freely every year, but has not produced fruit.
E. Leontodon *Taraxacum. Willd.* 3. 1544. Dandelion.

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E. Limodorum *aloefolium*. *Cymbidium*. *Willd.* 4. 101.

I. Lobelia *scævolifolia*. R.

Shrubby, erect, branchlets succulent and polished. Leaves sparse, cuneate-lanceolate, smooth, serrate. Peduncles axillary, solitary, shorter than the leaves, one-flowered. Capsules clavate-turbinate.

A native of the thick, well-shaded forests which clothe the south face of the *Sandy Bay* range of mountains; where it grows to be a pretty large shrub, the flowers rather large and pure white.

E. Lonicera *Periclymenum* and *Caprifolium*. Two species of Honeysuckle.

E. Lupinus. Lupins two or three species in gardens on the hills.

I. Lycopodium. *cernuum*. *Willd.* 5. 30. (Compare with *P. Saururus*. *Willd.* 5. 50.)

Grows in great abundance on the mountains, where it is called *Buck's-horn*. General height from 1 to 3 feet, and uncommonly ramous.

I. Lycopodium *axillare*. R.

Stems erect, simple, imbricated on all sides with numerous, glossy, entire, acute, subappressed, ensiform leaves. Capsules axillary, solitary, sessile.

Found indigenous among grass on rather dry, rocky situations over the higher parts of the south face of *Diana's Peak*.

E. Magnolia *pumila*, *obovata*, and *fuscata*. All from China, and grow luxuriantly here.

E. Malva *mauritiana*. *Linn.* Ivy-leaved Mallow.

E. Mangifera *indica*. *Linn.* Common *Mango*, thrives well at the *Briars* only.

E. Melia *sempervirens*. *Willd.* Grows abundantly to the size of a small tree over most parts of the island, and highly ornamental, being in flower and seed the whole year.

E. —— *superba*. R. A large timber tree from *India*.

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E. Melia *robusta*. R. Is also a large timber tree from *India*.

E. ——— *Azedarach*. *Willd*. 2. 558. A good and beautiful timber tree; a native of *China*, &c.

E. Melissa *officinalis*. *Willd*. 3. 146. Balm.

E. Mentha *viridis*. *Linn*., and two or three undetermined species of Mint.

E. Mesembryanthemum. Fig Mary-gold. Several species Dr. R. saw in gardens; they were from the Cape of Good Hope originally.

E. Mespilus *japonica*. *Willd*. 2. 1010. *Louquat* of the Chinese This most elegant useful tree is perfectly at home here, and in time, with a little care, will be highly beneficial to *St. Helena*.

E. Michelia *Champaca*. *Willd*. 2. 1260. In one garden only.

I. Mikania *arborea*. R.

Arboreous, with straight trunk. Leaves alternate, petioled, oblong, smooth, gland-dentate-serrate. Panicles terminal, drooping. Calyx simple, cylindric, 5-toothed, 5-flowered.

She-cabbage tree the vernacular name. In the forests which decorate the south face of *Sandy-bay ridge*, it grows plentifully to be a tall slender straight *tree*, particularly while young; for by age it becomes bent to one side, and well furnished with crooked *brittle* branches. The *wood* is white, and the *pith*, which is used for tinder, in very large quantity. *Young shoots* smooth and of a bright purple colour; while the trees are young, say under 6-8 feet, simple, with the leafy top resembling an highly-coloured *colewort*, hence the vernacular name; when in this stage the *leaves* are generally from 1 to 2 feet long, by 4-8 inches broad; in old stunted trees 2-3 inches long, by 1-2 broad. *Panicles* rather thin, subdichotomous, coloured like the petioles, &c. corymbiform. *Bractes* single, smooth and small under each division, besides others on the pedicells, and round the base of the simple, cylindric, smooth, 5-toothed *calyx*, which, when the *seeds* are ripe splits into 5, linear, recurved leaflets.

E. Mimosa *arabica*. R. *Acacia*. *Willd*. 4. 1085.

E. ——— *Serissa*. R. or *Mauritius black-wood*.

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E. Mimosa *cinerea. Linn. Acacia cinerea. Willd.* 4. 1057.
E. ——— *glaucescens.* R. *Acacia glaucescens. Willd.* 4. 1052.
E. ——— *juniperina. Acacia juniperina. Willd.* 4. 1049.
E. ——— *linifolia. Linn. Acacia linifolia. Willd.* 4. 1051.
E. ——— *glauca. Linn. Acacia glauca. Willd.* 4. 1075.
E. ——— *farnesiana. Linn. Acacia farnesiana. Willd.* 4. 1083.
E. ——— *scandens. Linn. Acacia scandens. Willd.* 4. 1057. On the windward side of the island, the seeds are cast on shore and vegetate.

Besides the above there are some other exotic species, which the author had not an opportunity to determine.

E. Mimusops *Elengi. Willd.* 2. 325. Bocul of the Hindoos.
E. Mirabilis *Jalapa. Willd.* 1. 999. Common Marvel of Peru.
E. Momordica *Charantia. Willd.* 4. 601. The fruit, before maturity, much used in the diet of the Hindoos.
E. Moræa *chinensis. Willd.* 1. 245.
E. Morus *nigra. Willd.* 4. 369. Common Mulberry-tree.
E. ——— *atropurpurea.* R. A quick growing tree from *China.*
E. Murraya *exotica. Willd.* 2. 548. *China-box tree.*
E. Musa *sapientum. Willd.* 4. 894. Banana.
E. ——— *paradisiaca. Willd.* 4. 893. Common Plantain tree.
E. Myristica *moschata. Willd.* 4. 863. Banda *nutmeg,* one sickly plant in Major Hudson's garden in *James's Valley.*
E. Myrtus *Pimenta. Willd.* 2. 973. Introduced by Dr. Roxburgh in 1805. It thrives well in the garden near the south side of the island, where it is cool, and often moistened with misty clouds.
——— *communis. Willd.* 2. 967. Grows most luxuriantly to the size of a small very ramous tree. Besides the common myrtle, there are two other varieties thereof.
E. Narcissus *Tazetta, Pseudo-Narcissus* and *Jonquilla.* In gardens.
E. Nerium *tinctorium.* R. and *odorum. Willd.* 1. 1235.
E. Nicotiana *Tabacum. Willd.* 1. 1014. Common *Virginian* and *Havanna Tobacco.*
E. Olea *europea. Willd.* 1. 44. Common *Olive.* Grows luxuriantly to

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be a tree of considerable size, and might be advantageously reared for fuel, independent of the fruit.

I. Ophioglossum *lusitanicum*. *Willd.* 5. 59.

E. Origanum *majoranoides*. *Willd.* 3. 137. A stout shrubby species of Marjoram.

E. Oryza *sativa*. *Willd.* 2. 247. This highly useful grain, *Rice*, does not thrive on any part of the island: at least such is the report; and Dr. R. saw nothing to make him think otherwise.

E. Osteospermum *pisiferum*. *Willd.*

Panicum *ciliare*. *Willd.* 1. 344.

——— *ægyptiacum*. *Willd.* 1. 343.

——— *Dactylon*. *Willd.* 1. 342. Wire-grass the vernacular name, and supposed to be a native of the island. *Agrostis stellata*, and *linearis* of Willdenow, I am inclined to consider this very identical species, consequently the East Indian *Dup-grass*, or *Dupa*.

E. ——— *italicum*. *Willd.* 1. 336. Is much cultivated in many parts of *Asia*, but does not thrive on *St. Helena*.

E. ——— *molle*. *Willd.* 1. 340, or Scotch grass.

E. ——— *verticillatum*. *Willd.* 1. 334. Rough Panic-grass.

" Besides the above 6, there are two or three more, which Dr. Roxburgh had not an opportunity to ascertain.

E. Parkinsonia *aculeata*. *Willd.* 2. 513. A most beautiful small quick growing tree.

E. Passiflora *cærulea*. *Willd.* 3. 623. Common Passion-flower.

E. Pastinaca *sativa*. *Willd.* 1. 1466. Parsnip.

E. Pelargonium *betulinum*. *Willd.*
E. ——— *capitatum*. *Willd.*
E. ——— *angulosum*. *Willd.*
E. ——— *cucullatum*. *Willd.*
E. ——— *inquinans*. *Willd.*
E. ——— *denticulatum*. *Willd.*
E. ——— *graveolens*. *Willd.*
E. ——— *hybridum*. *Willd.*

} Geraniums. All introduced from the *Cape of Good Hope*.

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E. PENTAPETES. *Linn.* *Pterospermum suberifolium. Willd.* 3. 723. Saw only one tree on the island, it was reared in the Company's nursery from seed sent from *Bengal* by Dr. Roxburgh.

E. PHASEOLUS *vulgaris. Willd.* 3. 1030. Several varieties of Kidney-bean.

E. ———— *lunatus. Willd.* 3. 1031. Lima-bean

E. PHILLYREA *media. Willd.* 1. 42. Common Phillyrea.

E. PHLOMIS *nepetifolia. Willd.* 3. 1236.

I. PHYLICA *elliptica.* R.

Shrubby. Leaves opposite, short-petioled, elliptic, rarely subovate, thick and hard, hoary and concave underneath. Stipules 4-tern, ovate, concave. Flowers in peduncled, axillary, hoary heads. Capsules turbinate.

A native of the most elevated parts of *Diana's Peak*, and of the *Sandy Bay* range, where it grows to be a pretty large, but low spreading tree, there called the wild *Olive;* flowering in July and the seed ripen in March. The *wood* is dark-coloured, hard, and very useful.

I. PHYLICA *rosmarinifolia.* R.

Arboreous, very ramous. Leaves alternate, short petioled, lanceolar, acute, lucid above, hoary underneath, margins revolute. *Stipules* subulate. Flowers axillary, subsessile.

Wild Rosemary it is called by the islanders; and is found indigenous on moderately high mountains, where it grows to be a middling-sized useful timber tree of great beauty and fragrance. The *bark* tolerably smooth; the *trunk* short, thick, and crooked. The *leaves* bear an exact resemblance to those of *Rosemary:* lucid above and white underneath. *Flowers* minute, pale greenish white. Capsules size of a pea, oval, until dry-ripe bacciform, after they split into 3.

E. PHŒNIX *dactylifera. Willd.* 4. 730. A few trees only were seen, though they thrive well, and promise much benefit to the island if carefully managed.

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E. PHYLLANTHUS *andrachnoides. Willd.* 4. 575.

I. PHYSALIS *begonifolia.* R.

Shrubby and very ramous. Leaves in pairs, petioled, unequally ovate-cordate, entire, and soft. Peduncles axillary, solitary, drooping one-flowered. Calyx campanulate, larger than the white corol, its border divided into 5, broad, short unequal rounded segments.

A native of the rocky hills on the east and south sides of the island, and known by the name *Box-wood.* The *trunk* grows single to 2-4 feet in height and about as thick as a man's arm; its *bark* tolerably smooth and brownish. *Branches* numerous and divide into innumerable alternate villous *branchlets.*

E. PHYSALIS *peruviana. Willd.* 1. 1022. *Brasil-cherry*, is very common every where, because the goats do not eat it, and furnishes the inhabitants with ample supplies of large, palatable berries, without the least care.

E. PINUS *longifolia. Lamb. pin. tab.* 21. Of this magnificent pine there is but one or two young trees in the Governor's garden.

—— *Pinaster. Willd.* 4. 496. Grows well and to a great size on the south side of the island, also in the Governor's garden and plantations.

E, —— *Pinea. Willd.* 4. 497. Stone pine.

E. —— *sylvestris. Willd.* 4. 494. Scotch fir.

PISUM *sativum. Willd.* 3. 1070. Garden pea, a few varieties.

E. PITTOSPORUM *Tobira. Bot. Mag.* 1396.

I. PLANTAGO *robusta.* R.

Shrubby. Leaves crowded round the apices of the robust ligneous branches, linear, intire, withering. Spikes few, axillary, cylindric, long-peduncled.

A native of the tops of the moderately high hills over the island, where it grows to be a stout shrub, with but few very thick, simple, somewhat woody *branches; bark* strongly marked with the innumerable scars of the fallen leaves.

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PLANTAGO *major. Willd.*

POA *japonica. Willd.* 1. 394.
— *pratensis. Willd.* 1. 388.
— *laxa. Willd.* 1. 386.
} Three grasses of rather an inferior quality.

E. POINCIANA *pulcherrima. Willd.* Prickly flower-fence.

E. POLYANTHES *tuberosa. Willd.* 2. 164. Tuberose.

I. POLYPODIUM *macrocarpum. Willd.* 5. 147.

Surculi creeping, slender and very scaly, rooting on trees, rocks, &c. stipes short, slender, polished dark brown, and somewhat winged, while young scaly. Fronds (4-6 inches,) narrow-lanceolar, tapering most at the base, entire, rather obtuse, smooth, thick, firm, veinless, surfaces, particularly the under dotted with small ferruginous specks. Spots in one row on the exterior half, large, round and distinct, but intermixed with many peltate scales, which while young unite and form a complete polyphyllous involucre.

Is a pretty, delicate species, growing over the south face of *Diana's Peak*. It may be referred to *Pleopeltis* of Humboldt and Bonpland.

I. POLYPODIUM *molle*. R.

Stipes deeply channelled, and with the rachis clothed with soft hair and large brown ramenti. Fronds ovate, soft and hairy underneath, suboppositely-bipinnate; leaflets deeply crenate. Fructifications numerous, small, generally in two ill defined rows equally distant from the nerve and margin.

A native of *Diana's Peak*, grows in tufts in moist thickets to be 2-4 feet high.

I. POLYPODIUM *rugulosum. Willd.* 5. 206.

Stipes hairy. Fronds oblong alternately bitripinnate, texture thin and soft; pinnæ lanceolate, obtuse; leaflets dentate. Spots submarginal.

Found on *Diana's Peak*, growing to the height of 2-3 feet, but slender, and every way delicate.

I. POLYPODIUM *dicksonifolium*. R.

Stipes brown, channelled and scabrous. Fronds lanceolate subtri-

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pinnate: pinnulæ subopposite, linear-oblong, obtuse, deeply obtuse-crenate. Spots large, one or two on each of the ultimate segments of the frond, the margins of which turn down and in part covers them.

A pretty delicately divided plant, growing on *Diana's Peak* to the height of 8-12 inches.

I. Polypodium *viscidum*. R.

Surculi flexuose brown and shaggy, stipes, &c. channelled and clothed with clammy headed diverging soft hairs on a brown ground. Fronds ovate, subopppositely tripinnate and superdecompound: leaflets linear-oblong, obtusely crenate or pinnatifed. Spots distinct few or numerous, under the recurved crenatures of the segments of the leaflets.

Common about stone-dikes, &c. &c. *Sandy Bay*, where it grows to the height of from 6 inches to 2 or 3 feet, and fructifies all the year.

E. Populus *alba*. *Willd*. 4. 802. White Poplar, or Abele-tree; thrives well.

E. Portulaca *oleracea*. *Willd*. 2. 859. Common *Purslane*.

E. Protea *argentea*. *Willd*. 1. 529. Silver-tree.

E. ——— *mellifera*. *Willd*. 1. 522. Honey-bearing Protea.

E. Prunus *Armeniaca*. *Willd*. 2. 989. *Apricot*. This tree does not succeed here.

E. Psidium *pomiferum*. *Willd*. 2. 958. Common *Guava*.

I. Psoralea *pinnata*. *Willd*. 3. 1342. *Goble-gheer* the vernacular name.

I. Pteris *semiserrata*. R.

Stipes length of the ovate, oppositely bipinnatifid flimsy fronds, polished, smooth, green and channelled. Pinnæ lanceolate: segments divided nearly to the base, linear-lanceolate, barren apices serrate.

A native of *Sandy Bay*, where it grows to be 2-5 feet high.

I Pteris *paleacea*. R.

Stipes and surculi densely clothed with long brown scariose scales. Fronds suborbicular, bi-tripinnately pedate; leaflets falcate-linguiform obtuse. Rachis of the pinnæ spinulose on the upper side.

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A robust scarce species, of about two feet in height, a native of the south face of *Diana's Peak*.

E. Punica *granatum*. *Willd*. 2. 981. *Pomegranate*.
E. Pyrus *chinensis*. R. China pear; they are large, but very indifferent.
E. Pyrus *Malus*. *Willd*. 2. 1016. The apple, and but few sorts on the island.
E. —— *Cydonia*. *Willd*. 2. 1020. Quince.
E. Quercus *Robur*. *Willd*. 4. 450. Common British oak.
E. ——— *Ilex*. *Willd*. 4. 433. Evergreen oak.
E. ——— *Suber*. *Willd*. 4. 433. Cork-tree.

Ranunculus *bulbosus*. *Willd*. 2. 1324. Butter-cups.
E. Raphanus *sativus*. 3. 560. Radish.
E. Rhus *Vernix*. *Willd*. 1. 1497. One tree in the Deputy Governor's garden.
E. Ricinus *communis*. *Willd*. 4. 564. Common Palma-Christi. Grows luxuriantly.
I. Roella *angustifolia*. R.

Perennial, diffuse: branches long, slender and scabrous. Leaves alternate, sessile, linear-lanceolate, remotely and acutely gland-serrate-denticulate. Peduncles lateral, many times longer than the leaves, dichotomous, many-flowered.

Common in fissures of the rocks about Major Seal's farm in *Sandy Bay*, where fogs prevail and the thermometer ranges from 60 to 70. Is in seed and flower the whole year. The *flowers* are pure white, erect and pretty large. I think it would be an ornamental plant for the flower garden.

I. Roella *paniculata*. R.

Shrubby, erect, branchlets hairy. Leaves sparse, sessile, cuneate-lanceolar, serrulate, hairy. Panicles terminal, hairy.

A slender upright shrub, with but few erect branches; a native of the thick forests on the south face of *Diana's Peak*; the *flowers* are large and white.

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I. Roella *linifolia*. R.

Shrubby, subparasitic (on *Dicksonia arborescens*.) Leaves sparse, sessile, numerous, linear, smooth, very acutely serrulate. Peduncles (racemes,) terminal few-flowered.

A pretty little ramous diffuse alpine plant found on the top of *Sandy Bay* ridge, chiefly on *Diana's Peak*. *Leaves* crowded round the somewhat villous columnar *branches*. The flowers white, with a tinge of pink, and highly ornamental.

E. Rosa *triphylla*. R. Scandent, ternate-leaved, large white single rose.

E. —— *centifolia*. *Willd*. 2. 1071. *Common rose*.

E. —— *muscosa*. *Willd*. 2. 1078. *Moss rose*.

—— *chinensis*. *Willd*. 2. 1078.

E. —— *semperflorens*. *Willd*. 2. 1074.

Rubus *pinnatus*. *Willd*. 2. 1081?

Shrubby. Leaves pinnate; leaflets 5 or 7, rarely 3, ovate-cordate, lucid, strongly veined, doubly serrate. Panicles terminal. Stems, branches, petioles and peduncles armed; tender shoots villous and hoary.

Bramble the vernacular name on *St. Helena*, where it proves a most noxious plant: running over very large tracts of the best land, where the rapidity with which it grows to a much larger size than the common *bramble* of *Europe* (*Rubus fruticosus*) has hitherto baffled every attempt to extirpate it. The *roots* grow to a great size, and every bit left in the ground grows. *Stem* scarce any: what there is, grows to be as thick as a man's leg sometimes. *Branches* numerous, very long and scandent, when their apices rest on the ground they strike root and produce other plants, as in the other species of this genus: the *young shoots* glaucous and downy; the *bark* of the old dark brown; all are well armed with numerous recurved prickles. *Leaves* alternate, pinnate, 6-12 inches long; *leaflets* ovate and ovate-cordate, smooth, doubly serrate. *Petioles* and ribs armed. *Stipules* petiolary, ensiform. *Panicles* terminal, with their peduncles and subdivisions armed and downy. *Bractes* like the stipules. *Calycine* segments

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lanceolate, nearly twice the length of the ovate, pink *petals*, and they are rather longer than the *stamina* and *styles*. *Berries* in shape, size, and colour very like those of the common *bramble*, but scarce so palatable.

Some of the old inhabitants say it was brought originally from England for the common bramble of that country; others, and with greater probability, say it was brought from the *Cape of Good Hope*.

E. Rumex *vescicarius*. *Willd.* 2. 256. Bladder sorrel, and *Acetosa*, or common sorrel.

E. ——— *patientia*. *Willd.* 2. 249. and one or two species, which Dr. Roxburgh had not an opportunity of ascertaining.

E. Ruta *graveolens*. *Willd.* 2. 542. Rue.

E. Salix *babylonica*. *Willd.* 4. 671. Weeping-willow, and two more unascertained species.

E. Saccharum *officinarum*. *Willd.* 1. 321. Sugar-cane.

I. Salsola *salsa*. *Willd.* 1. 1312. Common over the most barren parts of the island.

E. Salvia *officinalis*. *Willd.* 3. 129. Common Sage, and *coccinea*, scarlet Sage.

E. Sambucus *nigra*. *Willd.* 1. 1495. Common Elder.

E. Sanseviera *zeylanica*. *Willd.* 2. 159.

E. Scytalia *Litchi*. *see Gært. sem.* 1. 197. *Litchi* of China, a well-known fruit.

E. ——— *Longan*. R. *Longan*, or *Dragon's-eye*, the small round grey *Litchi*.

E. ——— *Rambootan*: R. *Nephelium lappaceum*. *Linn.* Rambootan of the Malays.

E. Senecio *Jacobea*. *Willd.* 3. 1997. Common Rag-wort.

E. Sida *lanceolata*, and *microphylla*. *Willd.* 3. 736 and 739.

E. Sigesbeckia *orientalis*. *Willd.* 3. 2219. A weed in gardens.

E Solanum *tuberosum*. *Willd.* 1. 1033. Common *Potatoe*, several varieties.

E. ——— *Lycopersicum*. *Willd.* 1. 1033. Love-apple.

E. ——— *Pseudo-capsicum*. *Willd.* 1. 1026. Bastard Capsicum.

E. ——— *Sodomeum*. *Willd.* 1. 1043. Black-spined Solanum.

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E. SOLANUM *Jacquinii. Willd.* 1. 1041.

E. ——— *nigrum. Willd.* 1. 1035. Garden Solanum; its leaves used as spinage.

I. SOLIDAGO *spuria. Willd.* 3. 2053. *Conyza Rugosa. Ait. Kew.* 3. 184.

Arboreous. Leaves short-petioled, cuneate-lanceolate, obtuse, serrate-dentate, tomentose underneath. *Corymbs* terminal (ultimately in the forks,) length of the leaves, much crowded.

Bastard-Cabbage-tree of the islanders. On the tops of the highest mountains it grows to be a large, but inelegant tree. The *wood* close-grained, white and durable, but its chief use is for fuel.

I. SOLIDAGO *Leucodendron. Willd.* 3. 2054?

Arboreous, very ramous. Leaves sessile, cuneate-lanceolar, anterior margin serrate, smooth. Corymbs terminal, length of the leaves, many-flowered: flowers subcylindric: female florets 6-10 in the ray, and 4-6 hermaphrodite in the centre.

Cabbage-tree-gum-wood the vernacular name on *St. Helena*, where it is indigenous on the mountains at an elevation of from 1500 to 2000 feet above the sea, and grows to be a pretty large, very ramous tree, its ultimate ramifications trichotomous, with dark brown *bark*, rendered scabrous by the numerous elevated scars of the fallen leaves. *Leaves* smoother and less clammy than in the other species. *Corymbs* terminal, several together: *peduncles* and divisions cylindric and smooth: *flowers* numerous, small and white, the female florets revolute; *bractes* subulate; *scales* of the calyx decrease so as to be very minute at the base. The *wood* used for fuel chiefly.

I. SOLIDAGO *integrifolia.* R.

Arboreous with far spreading branches and smooth glossy branchlets. Leaves sparse, approximate, sessile, cuneate-lanceolate, obtuse, intire, margins revolute, glossy above, while young slightly woolly underneath. Corymbs terminal, length of the leaves, very ramous and large.

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Black-cabbage-tree,* the vernacular name; on *Sandy Bay* ridge it grows to be one of the largest, some say the largest indigenous tree on the island; the *trunk* about 5-6 feet in circumference; the *coma* very ramous large and spreading; *wood* white, hard and serviceable for various purposes, but fuel chiefly. *Flowers* white, appearing in January, *female florets* 20-30 in the ray: *male* in the disk, and numerous; *receptacle* naked, convex: *pappus* hairy. *Calyx* subcylindric, imbricated: *scales* numerous, linear, acute.

I. SOLIDAGO *cuneifolia*. R.

Arboreous. Leaves sessile, cuneiform, grossly serrate on the anterior margins, very rugose (but scarce villous). Peduncles terminal, length of the leaves, few flowered; hermaphrodite and female florets about 2 of each.

He-cabbage-tree of the islanders. It grows to be a middle-sized tree its ultimate ramifications dichotomous: *bark* thereof olive-brown. *Leaves* less crowded than in *Leucadendron* but larger, anterior half deeply serrate: posterior half entire and taper much, all are very rugose, and villous underneath. *Peduncles* terminal, simple and one-flowered, or soon divide into 2, 3 or 4 long, slender, smooth, one-flowered pedicells: flowers white: *calyx* cylindric, &c. as in *Leucodendron*; the *female florets* are nearly as numerous as the *hermaphrodite*, lanceolar, apices 3-dentate, spreading at first, but by age become revolute.

I. SOLIDAGO *rotundifolia*. R.

Arboreous. Leaves alternate, long-petioled, from oval to subrotund, serrate-dentate, smooth, while young shining with clammy varnish. Panicles terminal, spreading, length of the leaves, very ramous and subrotund.

A native of the heights of *St. Helena*, where it is called *Bastard Gumwood* by some, and *Cabbage-tree* by others. On the hills and mountains it grows to be a tree of about 20 feet in height, with a crooked *trunk* which is thick in proportion to the size of the tree; its *bark* and that of the branches almost black, but pretty smooth, except for the numerous scars

* White-wood-cabbage-tree, see *Bidens arborea*.

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left by the decayed leaves. *Wood* white, hard and durable. *Petioles* channelled, nearly as long as the leaves. *Panicles* terminal when they first appear, but by the growth of 2 or 3 branchlets from the apex of the twig they soon stand in the fork thereof: this is the general habit of all those *syngenesious* trees found, by me, on this island. *Flowers* numerous, small and white, 3-10 ligulate revolute female *florets* in the ray, and 7-8 tubular male in the disk.

SONCHUS *oleraceus* and *lævis*. Common sow-thistles.

E. SPARTIUM *junceum*. *Willd.* 3. 926. Broom.

I. SPILANTHES *tetrandra*. R.

Shrubby. Leaves opposite, short-petioled, oblong, serrate, convex, reticulate underneath. Peduncles axillary, solitary, 1, rarely 2-flowered, bracted: florets tetrandrous.

Indigenous on the mountains, where it grows to be 4-5 feet high.

E. SPINACIA *oleracea*. *Willd.* 4. 766. Common *Spinage*.

E. SPIRÆA *corymbosa*. R. A pretty China shrub, already described by Dr. Roxburgh.

E. SWIETENIA *Mahogoni*. *Willd.* 2. 557. *Mahogany tree* introduced from the Botanic Garden at *Calcutta*.

E. ——— *febrifuga*. R. East India Fever-bark tree.

E. SYRINGA *vulgaris*. *Willd.* 1. Common Lilac.

E. TAGETES *patula* and *erecta*. *Willd.* 3. 2126. *French* and *African Marygold*.

E TAMARINDUS *indica*. *Willd.* 3. 577. Tamarind-tree.

E. TAXUS *elongata*. *Willd.* 4. 857. *Cape of Good Hope Yew*.

E. —— *chinensis*. R. China Yew.

E. TECTONA *grandis*. *Willd.* 1. 1088. Teak-tree.

E. TERMINALIA *Catappa*. *Willd.* 4. 967. An elegant and useful large tree.

E. TETRANTHERA *macrophylla*. R. Brought from Bengal by Dr. Roxburgh, being the food of the *Mogadooty silk-worm*.

E. THEA. *Tea*. Saw one or two stunted plants in the Governor's garden.

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E. THUJA *orientalis. Willd.* 4. 508. Chinese Arbor-vitæ.
E. ——— *cupressoides. Willd.* 4. 510. African Arbor-vitæ.
E. THYMUS *vulgaris. Willd.* 3. 139. Common Thyme.
E. TRADESCANTIA *discolor. Willd.* 2. 18. Purple-leaved Tradescantia.
E. TRICHOSANTHES *anguina. Willd.* 4. 598. Snake-gourd.
E. TRIFOLIUM. *Clover.* Several sorts have been repeatedly tried, but with little success: in some places a little white clover is seen growing amongst the grass in gardens.
E. TRITICUM *æstivum*, and *hybernum.* Summer and Winter wheat.
E. TROPÆOLUM *majus. Willd.* 2. 298. Indian-cress.

E. ULEX *europeus. Willd.* 3. 969. Common-whin.
E. ULMUS *virgata.* R. A small tree from China.
E. URTICA *tenacissima.* R. *Calvoee* of the Malays, from the fibres of its bark the *China-grass cloth* is made.

E. VICIA *Faba. Willd.* 4. 1111. *Garden-bean.*
E. VINCA *rosea. Willd.* 1. 1233. Rosy Periwinkle.
E. VITIS *vinifera. Willd.* 1. 1180. *Grape-vine.*
E. VOLKAMERIA *inermis.* See *Clerodendrum.*
E. VIOLA *tricolor. Willd.* 1. 1168. Pansy.

E. ZEA *Mays. Willd.* 4. 200. *Indian-corn*, is common in gardens, but does not seem to make any thing like a profitable field-crop.
E. ZAMIA, one small plant of an uncertain species in the public nursery.

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APPENDIX II.

Abstract of the Population and Cattle on the Island of St. Helena from the year 1683 *to* 1733; *extracted from the Records.*

Year.	Total Inhabitants.	Total Cattle.
1683	490	not ascertained.
1714	832	964
1716	855	1368
1717	833	1689
1719	801	1765
1720	not ascertained.	1863
1721	834	1711
1722	800	1554
1724	788	727
1733	840	1854

List of the Population, Cattle, Free and Lease Lands, from the year* 1769 *to* 1812, *at intervals of five years.*

Year.	WHITES.					BLACKS.					Grand Total.	CATTLE.								LANDS.		
	Men.	Women.	Boys	Girls.	Total.	Men.	Women.	Boys.	Girls.	Total.		Bulls.	Cows.	Calves.	Yearlings.	Heifers.	Steers.	Bullocks.	Total.	Free Land.	Lease Land.	Total.
																				Acres.	Acres.	Acres.
1769	53	93	92	96	334	271	170	169	111	721	1055	47	847	584	447	236	241	74	2476	2205¼	2200	4405¼
1774	46	87	97	100	330	284	177	214	144	819	1149	43	787	625	237	231	240	93	2256	2205¼	2316½	4521¼
1779	41	91	97	105	334	346	200	209	163	918	1252	47	622	300	180	194	155	26	1524	2205¼	2376¼	4581½
1784	54	96	92	108	350	377	207	241	176	1001	1351	45	636	411	211	263	249	49	1864	2205¼	2427	4632¼
1789	56	97	103	132	388	451	278	279	217	1225	1613	50	771	556	173	236	218	61	2065	2205¼	2543¾	4748¾
1794	48	10[illegible]	97	145	392	439	272	279	240	1230	1622	48	494	367	89	164	43	14	1219	2205¼	2584¼	4789¼
1799	18	104	94	142	388	405	268	327	257	1257	1645	44	911	729	200	268	297	104	2553	2205¼	2791¼	4997
1803	73	108	105	150	436	383	220	270	254	1127	1563	—	—	—	—	—	—	—	—	—	—	—
1804	87	121	105	163	476	386	213	276	265	1140	1616	45	801	593	199	262	239	63	2202	2205¼	2902¾	5108
1809	100	153	138	200	591	386	277	279	257	1199	1790	47	846	717	178	194	217	96	2295	2205¼	3766¾	5972½
1812	110	152	147	173	582	337	239	315	259	1150	1732	36	543	407	86	201	133	88	1494	2205¼	3799½	6005¼

REMARKS.—The further importation of slaves was interdicted by the Court of Directors in 1792; and permission granted to any person to

* The Civil and Military Establishments, and the Free Blacks, and Company's Slaves, are not included.

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manumise, or set free, any slave or slaves, on condition that they should not become burthensome to the parish.

At that period, the number of slaves (men, women, and children) belonging to individuals was 1292. Not having any record of the Company's slaves and free blacks, prior to 1803, I cannot give a correct view of the increase of black population since 1792. I am, however, enabled to shew, that there has been an *increase* since 1803. This is, in fact, the most accurate period to begin with, because, in 1802 the progress of population received a check, by a mortality of about 160, occasioned by the measles. Beginning then at 1803, the increase of black population will be seen by the following comparison.

In 1803, slaves (men, women and children) belonging to individuals	1127
Company's slaves	81
Free blacks	331
Total	1539
In 1812, slaves belonging to individuals	1150
Company's slaves	89
Free blacks	448
Total	1687
Difference, or *increase*, in nine years,	148

This is perhaps as correct a view as can be made, in any place or island, of the change that has taken place in the number of inhabitants; because not more than two or three instances have occurred of subtracting by desertion or removal, and none of adding, by the import of foreign blacks, within this period of nine years.

Chinese labourers were first introduced in 1810. Three years afterwards there were 270 able men. The government of the island were so well satisfied of their utility that it was resolved to augment the establishment to 400. Some account of their employments, pay, &c. is given in p. 186.

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APPENDIX III.

THE largest produce of Corn obtained at the Company's farms, in 1814, was as follows:

11 acres of Cape barley yielded 69 bushels per acre.
1¼ ditto Cape wheat - - 52 - - ditto
5 ditto Barley wheat - - 40 - - ditto

APPENDIX IV.

List of Seventy-six different Species of Fish at St. Helena.

Whale	Mackarel	Soldier	Hog, 2 sorts
Ground Shark	Stone-brass	Bastard ditto	Cod
Shovel-nose ditto	Cunning	Barracoota	Devil
Dog ditto	Flying	Pyke	Lather-coat
Mackarel ditto	Trooper	Sword	Bream
Sun	Green, 2 sorts	Thrasher	Snake
Albicore	Old Wife	Kingson	Beard
Porpoise	Silver	Sand Spear	Serpent
Bottle-nosed ditto	Five-finger	Rock ditto	Flounder
White Conger	Gurnet	Trumpet	Striped
Red ditto	Mullets, 3 sorts	Sole	Parrot
Speckled ditto	Bull's-eyes, 3 ditto	Cat	Eel, 2 sorts
Green ditto	Jacks, 2 ditto	Flying ditto	Shrimp
Yellow-tail	Cavally Pilot	Sucking	Turtle
Cavally	Bonnetta	Lanthorn	Craw
Coal	Dolphin	Rock	Stump } shell
Bastard ditto	Pilot	Bottle	Long-legs } fish.

REMARKS.—Whales in great numbers generally appear in August, and remain about three months. If, during the period of their stay, a few expert fishermen were employed, a considerable number might be killed every

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year. The species which frequents St. Helena is, by the South Sea whalers, called the " Race-horse." They yield about five tons of oil.

Albacore, congers, cavally, mackarel, old-wives, bull's-eyes, jacks, and soldiers, are most commonly taken and used. The coal-fish resembles a salmon both in shape and flavour; but are very rare. The yellow-tail and dolphin, which are also scarce, are remarkably fat and delicious at St. Helena; although when taken at a distance from land they are insipid, and coarse. The shell-fish called stumps and long-legs, resemble the lobster in taste and colour. Turtle weighing from 3 to 500 pounds are frequently caught.

With so great a variety of fish, there is no doubt, that the establishment of a proper fishery would be of vast advantage to the island. Hitherto the only mode of fishing practised is with hook and line.

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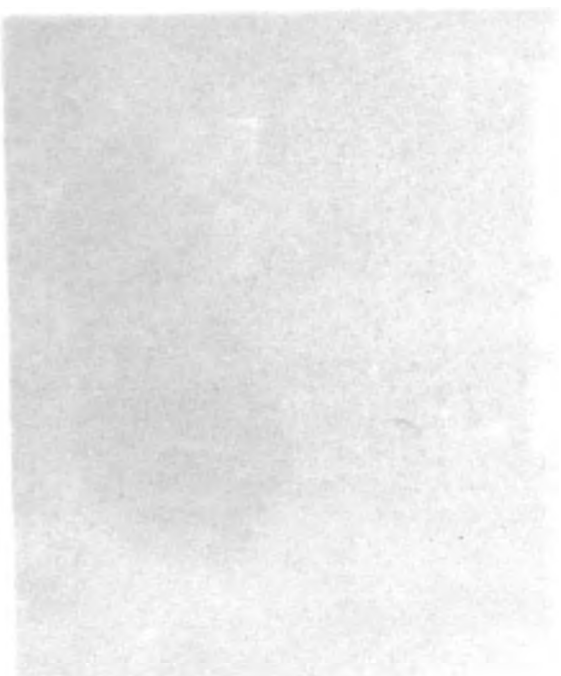

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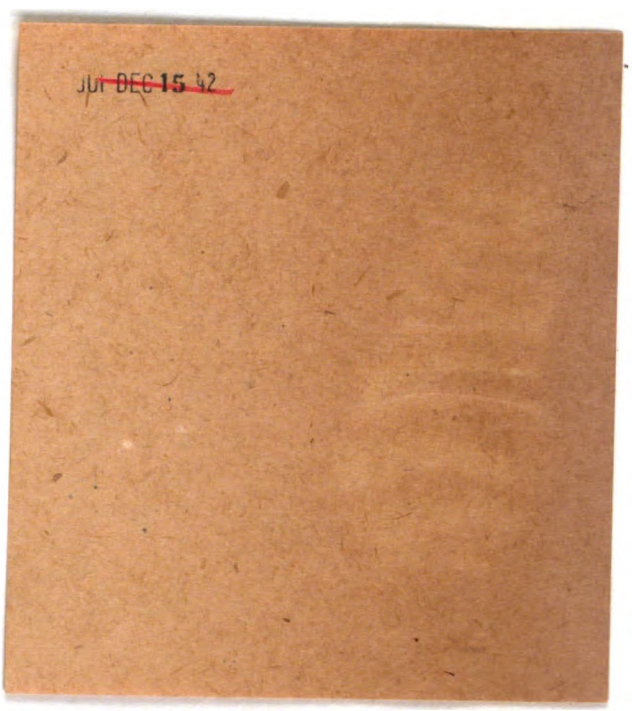
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